APRIL 17, 1961
Volume 50, No. 8

Contents—Page 7

OFFICIAL PUBLICATION OF THE PROCEEDINGS AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS

AMERICAN DYESTUFF REPORTER

TEXTILE WET-PROCESSING

KNITTING ARTS EXHIBITION NUMBER

For good printing
and continuous dyeing
add to your list of

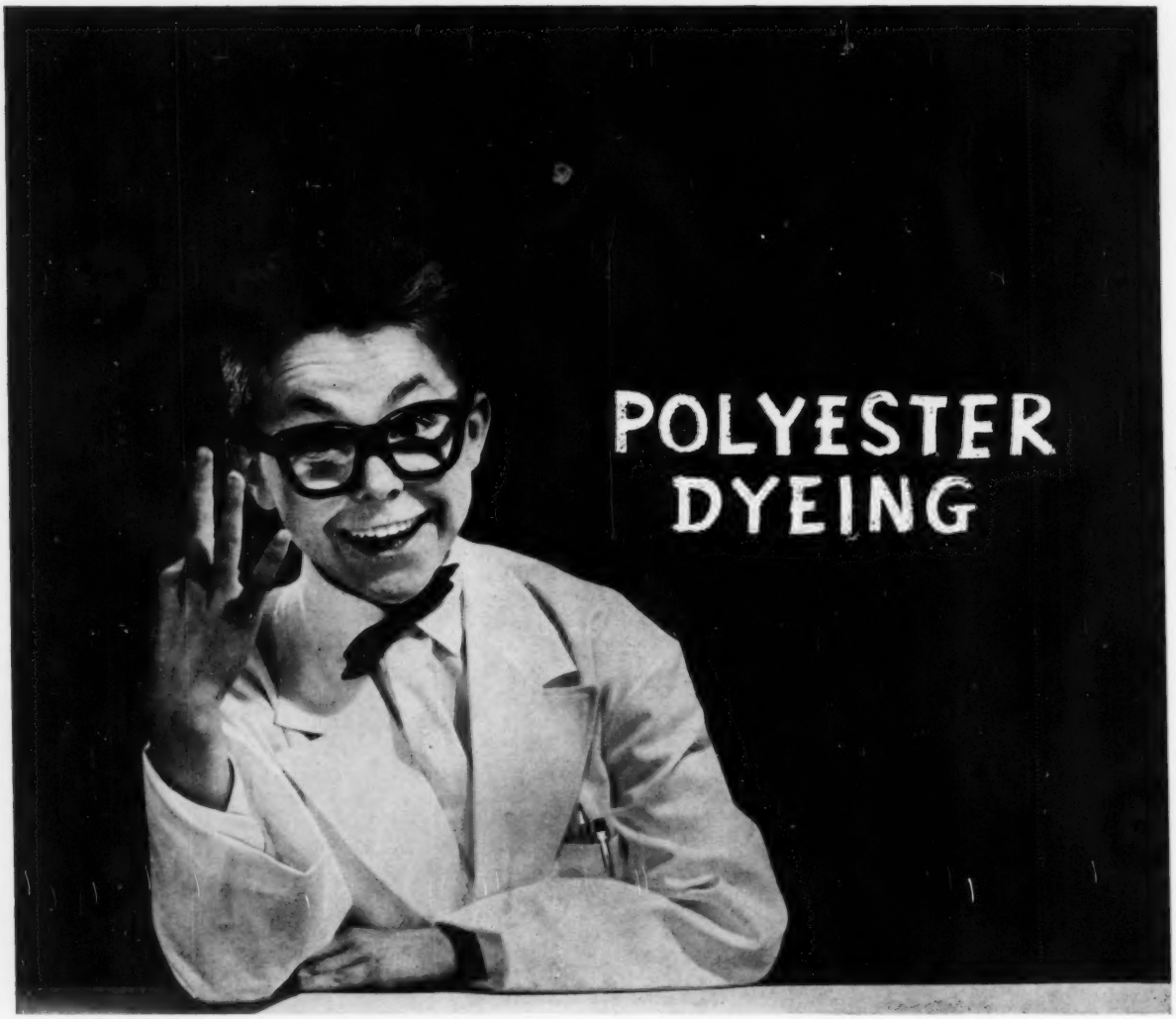
Cibacrons

Cibacron Scarlet 4GP

High solubility makes this addition to the Cibacrons particularly effective in printing and dyeing processes. From Ciba's traditional research comes this new reactive dye, producing scarlet shades of great brilliance and variety. May be discharged to white. Unfixed color is easily removed without staining. In pad steam operation, a high color yield is obtained within a short steaming time.

Let us tell you more about
this latest addition to
the ever-growing range
of Cibacron® dyes.

HOWES PUBLICATION



Simple as 1 2 3 with carolid®

1 Add carrier at 120° F. 2 Add dye within 5 minutes. 3 Bring to dyeing temperature.

carolid gives you spot-free, level dyeings on the beck, jig, or any other equipment. It saves time, gives up to 25% greater color yields, and its lasting action allows many dyestuff adds. Take the simple solution to your polyester dyeing problem: try non-toxic **carolid** yourself and see.

CHEMICALS FOR DIFFICULT PROCESSING

TANALID® PROCESS FOR POLYESTER PRINTING.
TANALON® SPECIAL FOR POLYESTER STRIPPING.
TANAPAL ME WHERE DISPERSE DYES PRESENT LEVELING PROBLEMS.
TANAPON X-70 REMOVES MORE FATTY EXTRACTABLES FROM GREIGE GOODS THAN SOLVENT SCOURS.

TANATEX

For details write, wire, phone:

TANATEX
CHEMICAL CORPORATION
BELLEVILLE TURNPIKE, KEARNY, NEW JERSEY • WYMAN 8-0733

ALSO: TANATEX CHEMICAL (HOLLAND) N.V./DER KINDEREHLAAN 3/LAREN N.H., HOLLAND

Koppers dyes are right for every fiber

Quality color in modern living is of utmost importance. To achieve consumer-pleasing shades of vibrant, long-lasting color—regardless of individual fiber characteristics—count on dependable Koppers dyes.

From a wide range, you can select the quality dye that will meet the most stringent requirements. Through intensified research programs, Koppers dyes have attained excellent processing characteristics for good build-up, even exhaustion and outstanding leveling properties.

Whatever your dyeing problem, contact your Koppers representative. Our technical service and laboratory facilities are always available. VMA 6408

KOPPERS COMPANY, INC. *CHEMICALS AND DYESTUFFS DIVISION*

Pittsburgh 19, Pennsylvania

(FORMERLY AMERICAN ANILINE PRODUCTS) PLANT: Lock Haven, Pa.

BRANCHES: Providence, R. I. • Philadelphia, Pa. • Paterson, N. J. • Chicago, Ill. • Charlotte, N. C. • Chattanooga, Tenn. Columbus, Ga. • Los Angeles, Calif.

IN CANADA: Dominion Anilines & Chemicals, Ltd., Toronto, Canada • Montreal, Canada

WICALOIDS

your silent partners in selling your customers

Fine upholstery, its pattern and hand, moves a living room suite out of a window and into a home. The sale gains momentum all along the line when you back upholstery with WICALOIDS. Tough back-locking power, resilient hand, superior aging, dyeability and sewing character continue profits for customers and for you.

Wica

SPECTRUM ACCURACY

WICA CHEMICALS, INCORPORATED

OLD CONCORD ROAD • CHARLOTTE, NORTH CAROLINA

American Dyestuff Reporter Vol. 50, No. 8, April 17, 1961. Published every other Monday. Printed at Easton, Pennsylvania. Copyright 1961 by Howes Publishing Co., Inc., 44 E. 23rd St., New York 10, N.Y. Domestic subscription $7.50; Canadian $8.50; Foreign $18.00. Second Class Postage paid at Easton, Pa.

Adogen 442 slashes cost of soft sell for knitwear!

Looking for a chemical that gives knitwear more of the pleasing softness that customers associate with quality . . . yet, that leaves substantially more profits? Then take a hard look at ADOGEN 442. Check the economy . . . the efficient performance . . . of this fatty nitrogen textile softening quaternary:

HIGHER EFFECTIVENESS ADOGEN 442 is the most efficient cationic softener on the market. It cuts textile treating costs by providing outstanding fiber-to-fiber lubricity at very low levels of application.

75% ACTIVE SOFTENER CONTENT ADOGEN 442 is highly concentrated. Thus, it cuts shipping costs too by reducing the amount of water handled.

BETTER QUALITY ADOGEN 442 is a whiter softener, with less odor. But more important, it offers better resistance to scorch and yellowing.

SUBSTANTIVE ADOGEN 442 can be applied to knit goods from a dilute aqueous bath using conventional treating equipment.

PROVED ADOGEN 442 has proved its economy and performance superiority as a home fabric conditioner. Now we hope you will evaluate it and discover its outstanding advantages for treating knitwear and other textile applications.

Archer-Daniels-Midland

CHEMICAL GROUP

700 INVESTORS BUILDING

MINNEAPOLIS 2, MINNESOTA

SEND FOR MORE FACTS ON ADOGEN 442

ARCHER-DANIELS-MIDLAND COMPANY

700 Investors Building • Minneapolis 2, Minnesota

Please send me complete technical information on ADOGEN 442 and a product sample.

I want to evaluate it for (use)_____

NAME_____

TITLE_____

FIRM_____

CITY_____ ZONE____ STATE_____

For greater sales in knitwear...

Cuprophenyl® colors are the answer
to current fashion shades on cotton knitwear.
Assurance of quality and economy is impelled by

- Outstanding resistance to washing
- Fastness to wet and dry cleaning
- Simplicity of application
- Resistance to light and perspiration
- Reduced processing time.

Geigy Dyestuffs

ESTABLISHED
1917

Including since 1921, the official Proceedings of the American Association of Textile Chemists and Colorists

AMERICAN DYESTUFF REPORTER

TEXTILE WET PROCESSING EXCLUSIVELY

NORMAN A JOHNSON
Editor

CHARLES A WHITEHEAD
Managing Editor

MYRON D REESER
Business Manager

HERBERT A STAUDERMAN
Advertising Manager

WILLIAM J O'CONNOR
Production Manager

BERYL A LAKNER
Circulation Manager

OFFICIAL
PUBLICATION
OF THE
PROCEEDINGS
AMERICAN
ASSOCIATION
OF
TEXTILE
CHEMISTS
AND
COLORISTS

American Dyestuff Reporter was founded in 1917 and the Textile Colorist was incorporated with it in January, 1949. Published every other Monday, by the HOWES PUBLISHING COMPANY, INC, 44 East 23rd Street, New York 10, NY. C R Howes, president; Ernest J Finan, executive vice president; Norman A Johnson, vice president & treasurer; Myron D Reeser, vice president; Clara Patrick, secretary.

Telephone SPring 7-9364

VOLUME 50 April 17, 1961 NUMBER 8

special feature

45th Knitting Arts Exhibition 27 (278)

specially contributed

Practical Hints for Processing Tricot 33 (284)
Herbert Luber

aatcc proceedings

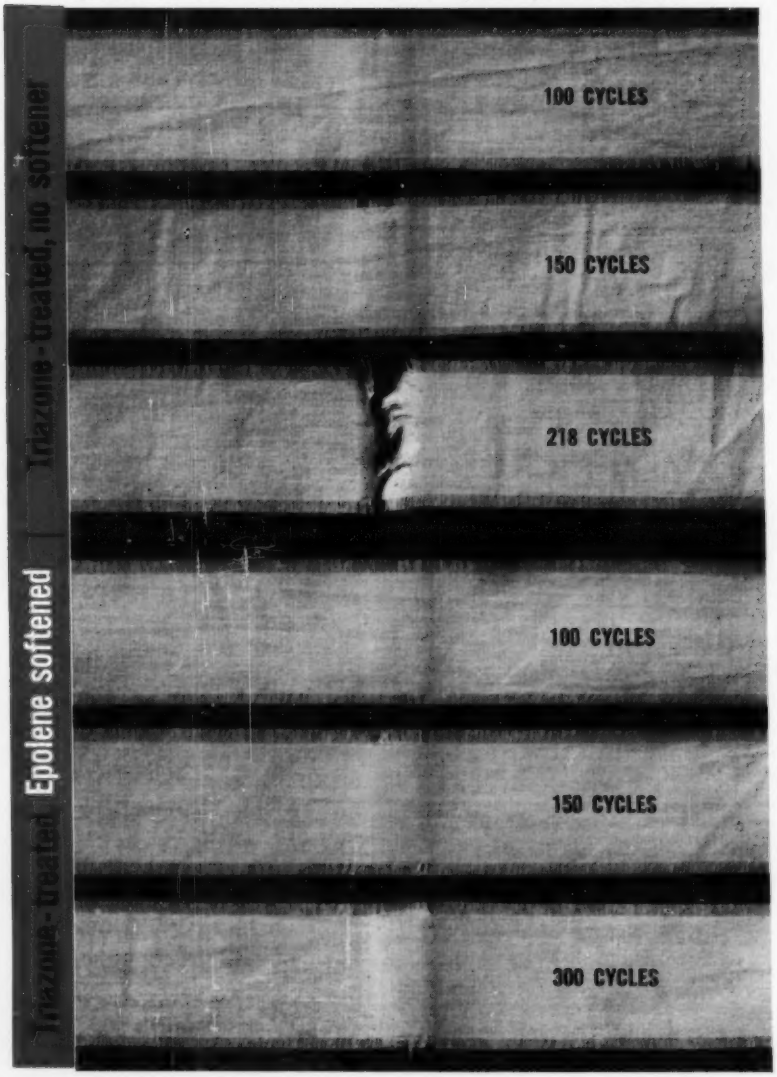
Automatic Color Control Applied to Hosiery Processing 40 (P287)
J S Christie
Status of Nonwoven Fabrics in the Textile Trade .. 45 (P292)
Howard E Shearer
Selection of Direct Dyestuffs for Application to Undesulfured Rayon Staple 52 (P299)
Southeastern Section
Employment Register 54 (P301)
Membership Applications 55 (P302)
Future Papers 55 (P302)
Activities of the Local Sections 56 (P303)
AATCC Calendar 58 (P305)
Elected to Membership 58 (P305)

departments

Open Forum 9 (277)
Future Papers 34 (285)
General Calendar of Coming Events 34 (285)
Abstracts 61 (306)
Patent Digest 62 (307)
Paul Wengraf
ADR News Report 65 (308)
New Products and Developments 66 (309)
Personalities in the News 70 (311)
Technical Literature 76 (314)

Copyright, 1961, Howes Publishing Co, Inc
Contents of previous issues can be found by consulting the Service and Technology Index and the Engineering Index, at your library

The Stoll-Flex Abrasion Test demonstrates the increased strength given to a resin-treated cotton fabric by an Epolene softener.

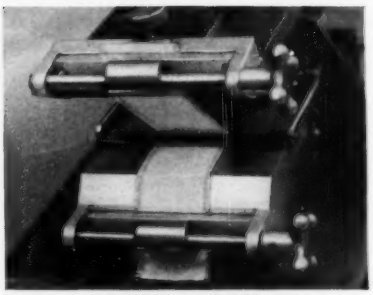


IT is axiomatic in the textile industry that the finishing resin alone does not a wash-and-wear fabric make. In fact, the variables are many, and often complex.

Of primary importance is selection of the softener. If properly chosen to match the specific type of finishing resin to be used, the combination can provide the optimum in tear strength, abrasion resistance, crease recovery, hand, and sewability for the treated fabrics.

Eastman offers three emulsifiable types of polyethylene resins for use as softeners... Epolene E-10, Epolene E-11, and Epolene E-12. These low-molecular-weight polyethylenes are suitable for either nonionic, anionic, or cationic systems, easily forming emulsions that are stable and low in color.

Epolene polyethylene emulsions have been evaluated under operating conditions with all of the principal wash-and-



Stoll-Flex Abrader

wear resins in use today. These include triazone, triazene, melamine formaldehyde, methylated melamine formaldehyde, dimethylol ethylene urea, and methylated urea-formaldehyde type finishing resins. The results of these test procedures are available to aid you in selecting the right softener for your finishing requirements.

For further information about Epolene textile emulsions, their preparation and use, contact your Eastman representative, or write Eastman Chemical Products, Inc., subsidiary of Eastman Kodak Company, Kingsport, Tenn.

Epolene®

EASTMAN LOW-MOLECULAR-WEIGHT POLYMERS

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tenn.; Atlanta; Boston; Buffalo; Chicago; Cincinnati; Cleveland; Detroit; Greensboro, N. C.; Houston; Kansas City, Mo.; New York; Philadelphia; St. Louis. **Western Sales Representative: Wilson & Geo. Meyer & Company,** San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.

ADR OPEN FORUM

April 17, 1961

IN a recent statement, Ernest J Chornyei, president of the Bradford Dyeing Association (USA), pointed out that eight front-line finishers located in the Middle Atlantic states and New England went out of business in 1960. Mr Chornyei continues: "This wholesale 'closedown' on the part of a vital section of the textile industry is no coincidence. Nor does it come as a shocking surprise to most firms engaged in the finishing of fabrics. But it does demand an immediate evaluation of the current business situation.

"During the entire past year, the profit squeeze resulting from increased costs and the highly competitive pricing structure of the textile industry has become more and more acute. One by one, firms that were saddled with backward management and outmoded equipment have fallen by the wayside. The increasingly alarming profit problem has caused a variety of situations, among them, an over-capacity of production facilities. Many finishing plants have developed their operations to the point that they now offer greater production capacity than there is textile finishing business available. As a result, a cut-throat element prevails in which all plants are fighting for more yardage in order to keep their personnel and equipment operating. The profit squeeze has also caused a heavy drain on capital, and a large number of textile-finishing companies have depleted their new equipment reserves. Now, these firms are finding themselves in the position of not being able to replace old equipment when it no longer functions properly, and not financially able to buy the new equipment that is necessary for handling new processes as they develop. On the positive side of the ledger, several companies have been able to increase their productivity sufficiently to overcome this profit squeeze. It is of course, no secret that the companies surviving these difficult times have two major advantages in common . . . namely a more enlightened management, and the ability of the finishing firm to keep abreast of all new developments in the textile field."

Mr Chornyei continues upon a subject that was of considerable interest at the recent first Annual Conference of the American Association for Textile Technology: ie, should there be a moratorium on the production of new fibers? He predicts that fewer new fibers will be produced than have been in the past two or three years and states that most of the chemical companies which have been producing new fibers in great numbers lately, now realize that a saturation point has been reached. He continues: "The extremely wide variation of fibers has been causing confusion both at the trade and consumer levels. Their decision is to give existing fibers a chance to become understood in the trade and consumer markets so that their promotional values can be fully exploited.

"Although we at Bradford Dyeing Association, USA, realize that there is still and always will be a need for the development of new fibers, this temporary hiatus will prove important to the entire industry. We particularly welcome this opportunity for further research on existing fibers because our laboratories will be able to concentrate on refining and improving the finishes that have been developed for today's fabrics".

We should like to hear from other dyers and finishers, and from fiber manufacturers, and dye and chemical producers as to their reactions on the new-fiber situation.

STAINS COST YOU MONEY...

prevent them with CALGON®

Among the many ways in which Calgon can lend a hand in textile processing, the prevention of costly stains pays off in immediate results. Calgon helps prevent and clean up stains in these three ways:

1. Calgon softens water — prevents lime soaps from forming. Calgon also supplements the detergent action of soaps and synthetic detergents, makes removal of existing stains easier and more effective.

2. Calgon in the dyebath prevents precipitation, and resulting stains. It reduces scum, has a dispersive and solubilizing action on dyestuffs, acts as a leveling and penetrating agent.

3. Threshold Treatment with Calgon* eliminates troubles from both dissolved iron and iron picked up from pipes. Economical because of the small amounts used, Calgon treatment is the most efficient way of preventing the contamination of process water with corrosion products.

These and many other uses make Calgon one of the textile industry's most helpful chemicals. Write for your copy of the recently revised booklet, "Calgon Data for the Textile Chemist."

*Fully licensed for this use under U. S. Patents 2,337,856 and 2,304,850.

CALGON COMPANY
DIVISION OF **HAGAN** CHEMICALS & CONTROLS, INC.
HAGAN BUILDING, PITTSBURGH 30, PA.
In Canada: Hagan Corporation (Canada) Limited, Toronto

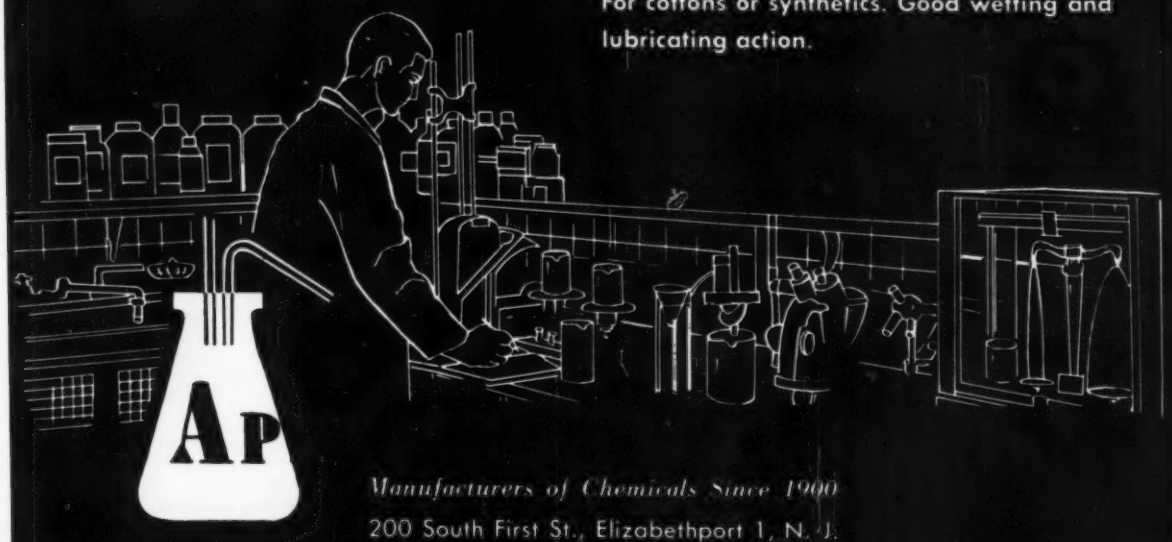
Pure white softeners with ready solubility in cold or hot water. Widely compatible. Non-chlorine retentive. Economical.

Polyethylene softeners which work in hard water, give a soft feel and eliminate needle cutting.

Special products to impart a soft hand and flameproofing properties on difficult blends as well as on natural fibers.

Coning and winding oils for natural, synthetic and rubber yarns.

Low foaming dyeing and kier boil assistants. For cottons or synthetics. Good wetting and lubricating action.



Manufacturers of Chemicals Since 1900
200 South First St., Elizabethport 1, N. J.
Telephone ELizabeth 4-5420

New Xenon Arc Fade-Ometer and Weather-Ometer

A new light source, the Xenon Arc, with accompanying control equipment, is now available in the Weather-Ometer and Fade-Ometer.

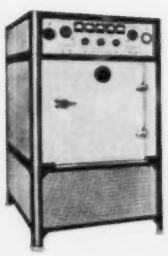
With a spectral energy distribution very close to that of natural sunlight, the Xenon lamp is ideal for use as the source of radiation in accelerated fading and weathering machines. The lamp employed in these new machines is a 6000 watt water cooled Xenon lamp which provides sufficient intensity to permit simultaneous exposure of a large number of samples of a generous size. The specimen rack of these machines has a diameter of 37¾″ and will accommodate up to 54 specimens 3″ x 9″ in size.

These new Xenon arc machines, like the carbon arc type of Weather-Ometer, provide automatic control of black panel temperature, cycles, etc. and are also available with automatic control of humidity during both the light-on and light-off periods of the cycle.

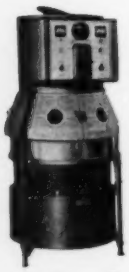
This Xenon lamp is also available with constant wattage transformers which insure a uniform radiation intensity regardless of variations in line voltage. Control equipment is provided which permits increasing the wattage of the lamp to compensate for the progressive loss of intensity as the lamp ages. These lamps have an anticipated useful life of 2000 hours and are of the replaceable burner type so that only the burner tube and not the complete lamp is replaced.

These new Xenon Arc Fade-Ometers and Weather-Ometers do not replace our present line of carbon arc machines but are offered as a companion line of machines for those who desire the improved spectral distribution.

Complete information with prices available upon request

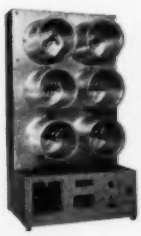


Weather-Ometer®
$2755 up.

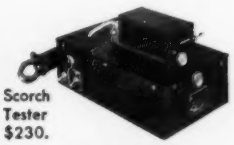


Fade-Ometer®
$1350 up.
Complete with supplies.

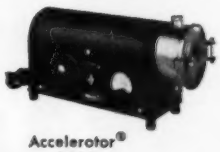
Launder-Ometer®
$875 complete with
accessories and supplies.



Random Tumble
Pilling Tester
$430 to $735.



Scorch
Tester
$230.



Accelerotor®
$485.

PERSPIRATION TESTER—A.A.T.C.C. CROCKMETER—LABORATORY WRINGER

ATLAS ELECTRIC DEVICES CO., 4114 N. Ravenswood Ave., Chicago 13, Illinois, U.S.A.

HILTON DAVIS

quality pigment
printing colors
impart elegance
to your fabrics

HILTONE® *water-in-oil*

SEABOND® *oil-in-water*

SKYTONE® *pigment padding*

each
offers
these extras

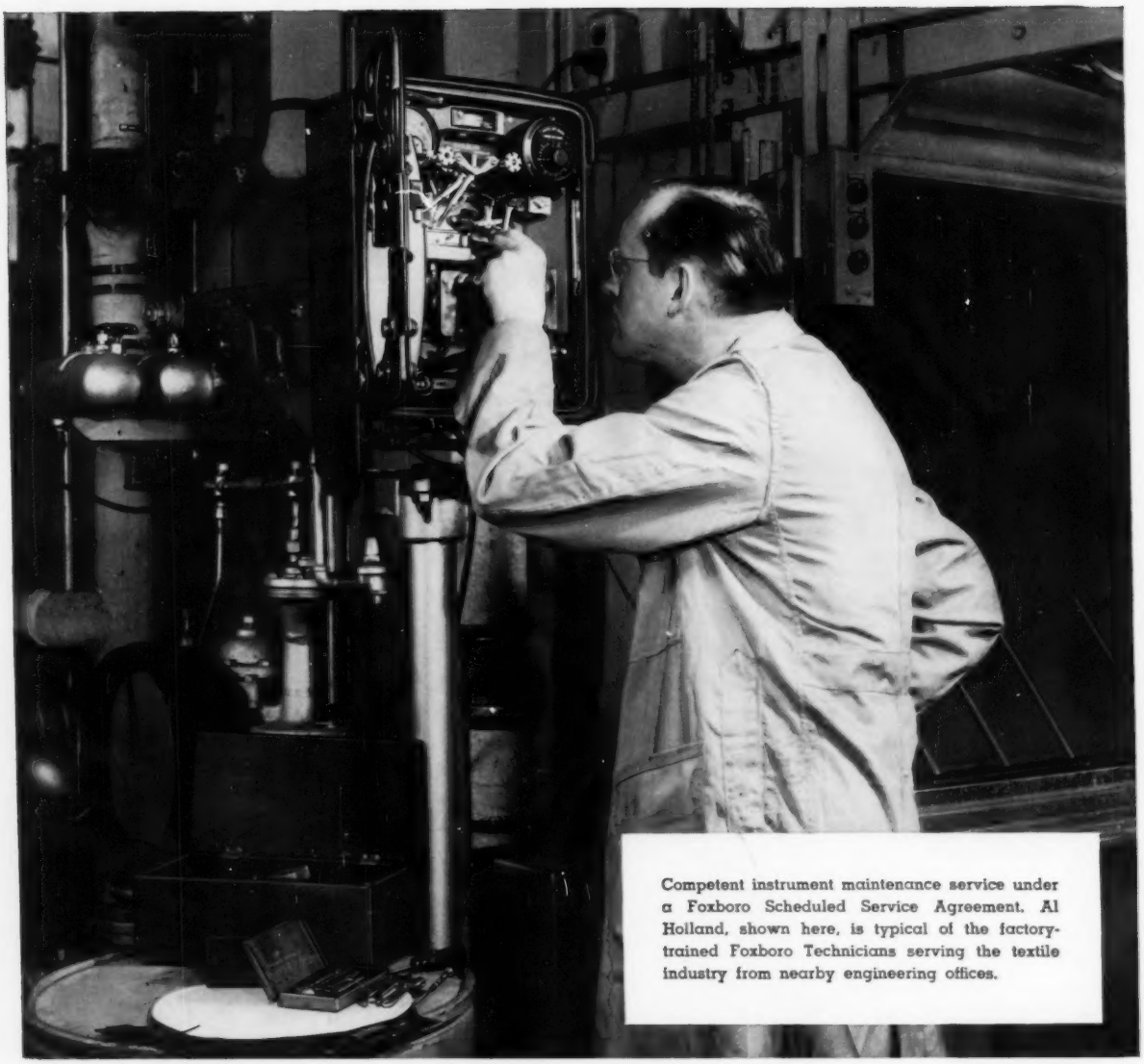
- **fastness to washing**
- **fastness to dry cleaning**
- **fastness to crocking**
- **compatible with drip dry finishes**
- **gives brilliant shades**
- **most economical**

THE HILTON-DAVIS CHEMICAL CO., DIV.

Sales Offices, Laboratories and Warehouses at Greenville, S.C.
Providence, R.I. • Newark N.J.

CINCINNATI 13, OHIO

PRODUCERS OF DYESTUFFS AND PIGMENTS



Competent instrument maintenance service under a Foxboro Scheduled Service Agreement. Al Holland, shown here, is typical of the factory-trained Foxboro Technicians serving the textile industry from nearby engineering offices.

Scheduled Service that saves you costly shutdowns!

There's no better way to avoid costly interruptions to production than by keeping your Foxboro instruments and control systems operating at peak efficiency. And the simplest, most economical way to do it is with a Foxboro Scheduled Service Agreement.

Under this plan, a Foxboro Service Technician will call at your mill at regular, specified intervals to maintain, clean, and service your Foxboro Instruments. You'll not only be served by competent, factory-trained personnel, using genuine Foxboro parts and methods; you'll also save substantially over non-contract service. Supervision of instrument installation is also available where needed.

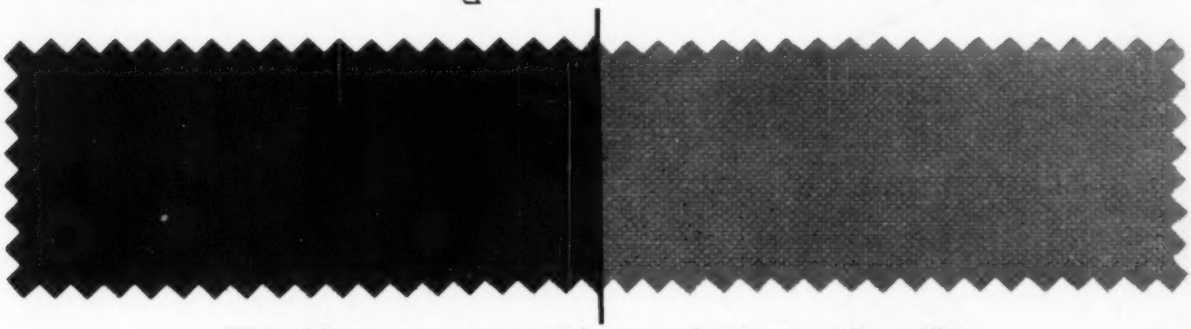
Don't wait until you're in trouble when it's so easy to prevent it. Let us recommend a *preventive* maintenance schedule for your plant now. Ask your Foxboro Field Engineer, or write for information today. **The Foxboro Company, 294 Norfolk St., Foxboro, Mass., U.S.A.**

FOXBORO
REG. U.S PAT OFF.

SCHEDULED MAINTENANCE SERVICE

NEW

STRIPPING ASSISTANT FOR VAT DYES HIGHLY EFFECTIVE ON ANTHRAQUINONE TYPE!



The Algepons are well known in the textile mills, where they have been used successfully for years.

Now there is a new Algepon®—X R. It represents a new high in efficiency for stripping vat dyes.

It also represents a new high in stripping vat dyes of the ANTHRAQUINONE type, being particularly effective on the most difficult types to strip, such as blue and khaki shades.

Algepon X R is effective, too, in stripping dyes of the azo type.

After the dye has been satisfactorily stripped, there is no tendency for the color to re-develop, under normal conditions.

Algepon X R is easy to use, involving only the addition to a conventional sodium hydrosulfite and caustic soda bath. It has excellent storage properties.

WRITE FOR TECHNICAL BULLETIN FOR FURTHER INFORMATION AND APPLICATION

ARKANSAS CO., INC.

NEWARK, NEW JERSEY

SERVING THE TEXTILE INDUSTRY FOR OVER 55 YEARS

PERMACHEM

(The long-lasting, durable bactericide*)

*Surface areas in hospitals are treated with Permachem to reduce the bacterial colony count.

In fabrics (clothing, socks, bedding, upholstery, etc.) it aids in reduction of bacteria which cause odors and diseases, by making goods sterile; contact destroys harmful germs.

Kills virtually all bacteria---
Long-lasting---
Resists washing---
Economically feasible---
Safe; no toxic effects---
Easily handled by operatives---

Permachem may be applied in normal textile processing and is easily handled by your operatives.

For information on application in your mill, please contact our office (TRinity 6-1797); our technical representative will visit with you if you so desire.

Warp Sizing: *Softeners, Binders, Penetrants, Ty-In Penetrants, Shuttle Dressing, Waxes.*

Wet Processing Chemicals and Auxiliaries: *Dye Assistants, Penetrants, Rewetting Agents, Sanforized Fabric Oils, Detergents, Scouring Agents, Softeners.*

Niagara Twist-Setter: *Yarn Conditioning Penetrants.*

Seyco Warp Lubricator.

Headquarters for textile chemicals

SEYDEL-WOOLLEY & CO.

748 RICE STREET, ATLANTA, GEORGIA

SEYCO

Again, the traditional SCHOLLER Red Carpet is rolled out to extend a cordial invitation to visit with us during the forthcoming Knitting Arts Exhibition at Atlantic City, April 24 to 28.

We look forward to this great Textile event for the opportunity it provides to personally meet and greet our friends—old and new.

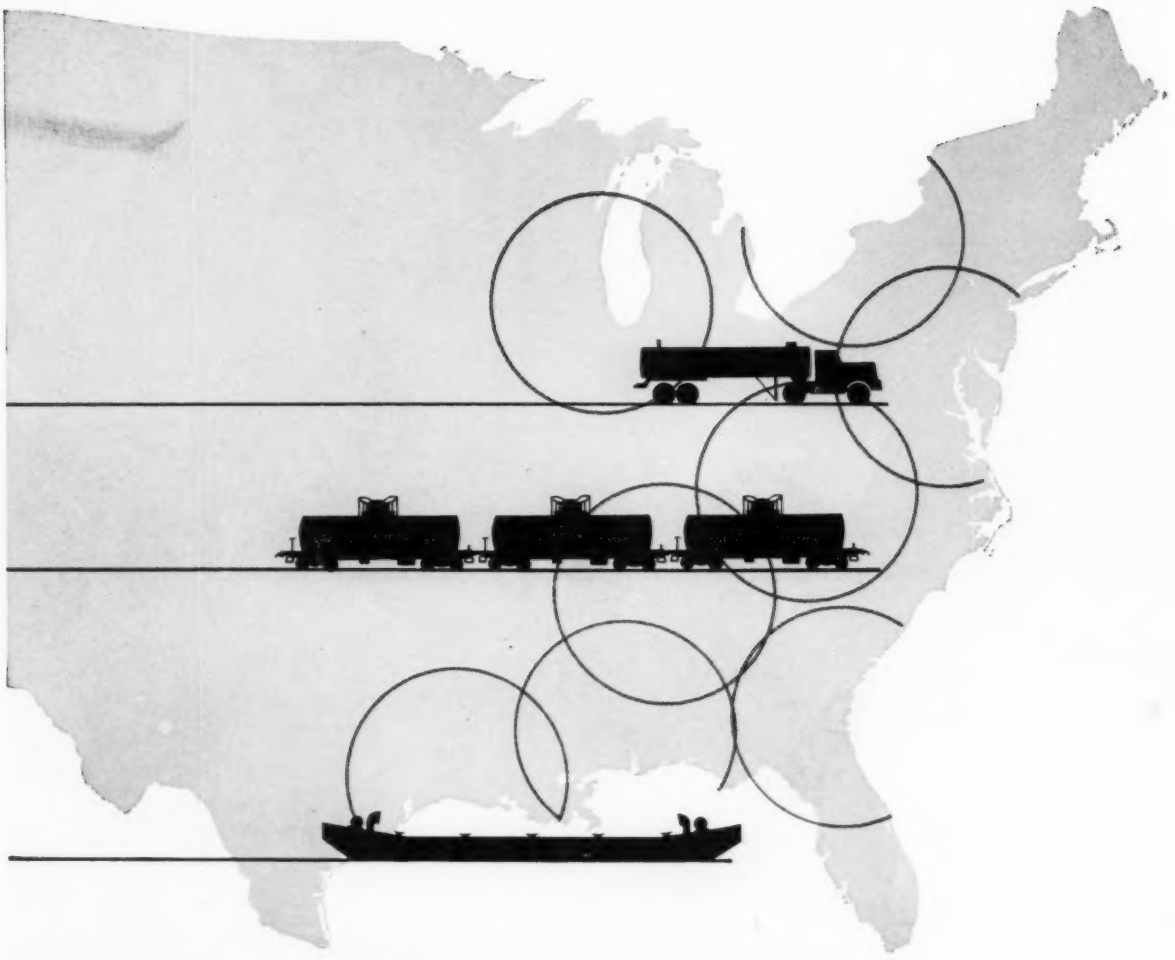
Come visit with us awhile, at the Show: Booth No. 701.

Scholler

PIONEERS IN THE BETTER FINISHES THAT MAKE THE BETTER FABRICS... SINCE 1907

Manufacturers of Textile Finishes, Resins, Softeners, Detergents, Soaps, Oils and Specialties

SCHOLLER BROTHERS, Inc., Collins & Westmoreland Streets, Philadelphia 33, Pa. IN CANADA: Scholler Brothers, Ltd., St. Catherines, Ontario



Here's how you get fast, convenient delivery with . . .

Mathieson Caustic Soda

The secret is *flexibility. Do you order by rail?* Olin Mathieson has eight producing plants and shipping points (with a ninth under construction) strategically covering the industrial East. You get fast delivery and save inventory investment because our plants are close to you.

Do you order by truck? Not only do you benefit from actual plant proximity but, in addition, Olin Mathieson *schedules* its truck delivery. This means we can time shipments *when* you need them. What's more, Olin Mathieson is the only producer that ships 73% caustic soda in trucks . . . which gives you a saving in shipping weight combined with convenient delivery.

If you need caustic soda to your specifications . . . if you want it fast and conveniently . . . check Olin Mathieson as a source. For information, write: **Olin Mathieson, Baltimore 3, Maryland.**

CHEMICALS DIVISION Olin

MATHIESON Chemicals—Ammonia • Carbon Dioxide • Caustic Soda • Chlorine • Hydrazine and Derivatives • Hypochlorite Products • Methanol • Muriatic Acid • Nitric Acid • Soda Ash • Sodium Bicarbonate • Sodium Chlorate • Sodium Chlorite Products • Sodium Methylate • Sodium Nitrate • Sulfur (Processed) • Sulfuric Acid • Urea

383

KNITWEAR FASHIONS

GDC DYES FOR ACRYLICS

tailored to fit the requirements of fiber, fabric, and wearer

Free-knit or full-fashioned, shaggy or smooth, cardigan or pullover, sports or dress wear—sweaters at their colorful best are dyed with GDC dyes.

Acrilan,[1] Creslan,[2] Orlon,[3] Zefran[4]—whatever your acrylic fiber—there is a range of GDC dyes that are just right for creating fashion shades with eye appeal and highest fastness to light, washing, perspiration, and drycleaning.

Genacryl,® Celliton,® Supralan,® Palatine®—remember these names for acrylic-fiber dyeing, for good fiber affinity in a broad range of bright, well-penetrated, level and economical fashion shades dyed by simple methods.

For acrylic sweater fashions in color—ask GDC.

Acrylic fiber of: (1) Chemstrand Corporation, (2) American Cyanamid Company, (3) E. i. du Pont de Nemours & Co. (Inc.), (4) Dow Chemical Company.

For complete information, call our Technical Service Department nearest you or write to:

gdc gaf

FROM RESEARCH TO REALITY

GENERAL DYESTUFF COMPANY

A DIVISION OF

GENERAL ANILINE & FILM CORPORATION

435 HUDSON STREET • NEW YORK 14, NEW YORK

CHARLOTTE • CHATTANOOGA • CHICAGO • LOS ANGELES • NEW YORK • PHILADELPHIA • PORTLAND, ORE. • PROVIDENCE • SAN FRANCISCO

IN CANADA: CHEMICAL DEVELOPMENTS OF CANADA, LTD., MONTREAL

increase **FULL-PRICE PERFECTS** with

d-2 LESTOIL®

You can't show a profit on cut-rate "seconds" due to imperfect cleaning. Convert them to spotless "perfects" with d-2 Lestoil in your scouring solution. With its superior wetting qualities, d-2 Lestoil quickly penetrates, completely emulsifies and disperses grease, oil, wax, graphite, soluble sizing and mill dirt . . . and prevents soil redeposition. d-2 Lestoil rinses out easily and completely, too; leaves gray goods soft and pliable, assures uniform bleaching and dyeing. Also ideal for spotting—is safe for all fabrics, even used full strength.

Get a generous FREE sample of d-2 Lestoil and complete information. Write Today!

LESTOIL PRODUCTS, INC., 134 Garfield Street, Holyoke, Mass.

Appearing in: AMERICAN DYESTUFF REPORTER, April, 1961; TEXTILE WORLD, May, 1961 #3026

Prepared by: The SACKEL-JACKSON Co., Boston 16, Mass.

NEW! NEW! NEW!

HARSHAW

Thermoprint

Trade Mark

CARRIER

Dry cure (Thermosol) processing of disperse color prints on polyester fabrics presents no problem to the printer who uses this new Thermoprint Carrier. Printed fabrics submitted to a minimum of 300°F for 5 minutes will indicate a brilliance and sharpness of mark which prior to this development have been difficult to obtain.

For further information write to

ZINSSER DIVISION
The Harshaw Chemical Co.
HASTINGS-ON-HUDSON 6, NEW YORK

You Can't Beat a Berkshire Drum!

Every time a Berkshire drum is delivered to you, you can count on getting a dyestuff of top and unvarying quality. Complete, unified production facilities, all under one roof, manned by specialists in dyestuffs, exclusively, make possible a quality control that safeguards the product and your use of it.

And accompanying each unbeatable Berkshire drum, is a service with a conscience. Berkshire's extensive research facilities and experienced technicians are available to solve your individual dyeing problems and to guide you in the most effective use of products bearing the highly respected Berkshire seal.

Berkshire COLOR & CHEMICAL CO.

WHY IT PAYS YOU TO DEAL WITH BERKSHIRE—

- Specialization — in Dyestuffs, Exclusively
- Completely Unified Manufacturing Plant — from Basic Chemicals — thru Intermediate to Finished Product
- Ultra-Modern Production, Research and Testing Equipment
- Trail-Blazing Scientific and Technical Personnel
- Successful Product Pioneering
- Individualized Problem Solving Service
- Lightning Delivery — from 4 Strategically Located Warehouses
- Highly Satisfied Customers — as Evidenced by Steadily Climbing Sales Curve

Organized to know your dyeing problems — Equipped to solve them!

Executive Offices—The 663 Building, Passaic, N. J. 663 Main Ave., (P.O. Box 1076, Passaic, N. J.)

Manufacturing Plant & Research Laboratories—Reading, Pa.

Branch Offices—Charlotte, N. C. (3209 Colleton Ave.) Springfield, Mass. (210 Albany St.)

Dress White—Stay Bright

White is always right—for mom's party dress, dad's shirts, daughter's blouse.

Becco Hydrogen Peroxide makes cottons whiter—keeps them that way. And it assures dyed shades that are brighter, longer lasting. This means more satisfied converters, retailers and consumers... more satisfied customers for *you*.

Fact is, whether you're bleaching cotton or wool; piece goods, knitgoods or stock; in a continuous system, kier, or beck; we can help you. Becco has the Hydrogen Peroxide and the *experience* to help you maintain the high quality that customers demand... the good clear whites... the brighter, more permanent dyed shades.

For full details and technical assistance, address Department ADR-61-7.

BECCO Hydrogen Peroxide

Putting Ideas to Work

fmc

FOOD MACHINERY AND CHEMICAL CORPORATION

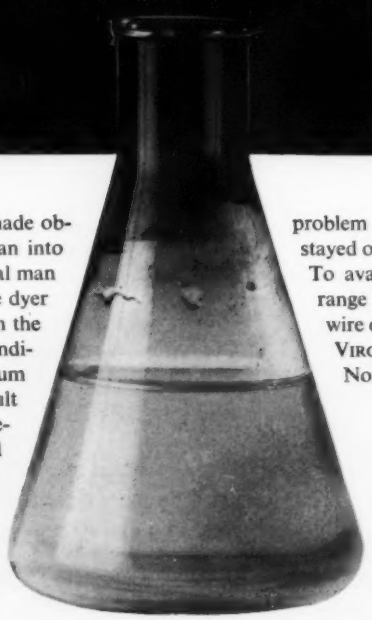
Becco Chemical Division

General Sales Offices:

161 EAST 42nd STREET, NEW YORK 17, N.Y.

Another example of "Virginia" nationwide technical service

Titration couldn't detect a 25 mv drop in reduction potential



A dyehouse accepted an order calling for a shade obtainable only with a very sensitive dye and ran into trouble. We got an SOS. A "Virginia" technical man was sent around to see what he could do. The dyer was using test papers and titration to check on the potential of the bath. Under-reduction was indicated, so the dyer was increasing the sodium hydro and getting over-reduction. The end-result was either crocking or dull shades. Our troubleshooter put his Redox recorder to work and found that the hard-to-handle dye stayed effectively soluble in approximately a 25 millivolt range. A new bath was prepared. By taking millivolt readings every 15 minutes, the exact proportions of hydro and caustic were finally established. To make sure the problem really had been solved, the "Virginia" man stayed on the job until the entire order was completed. To avail yourself of our technical service—or arrange for a free mill trial of "Virginia" hydro—call, wire or write us. No obligation. Industrial Division, VIRGINIA SMELTING COMPANY, Dept. 614, West Norfolk, Va.

VIRGINIA Chemicals

Field Offices: New York • Boston • Chicago • Atlanta
Asheville • Philadelphia • Akron • Seattle • Memphis

Available in Canada and many other countries

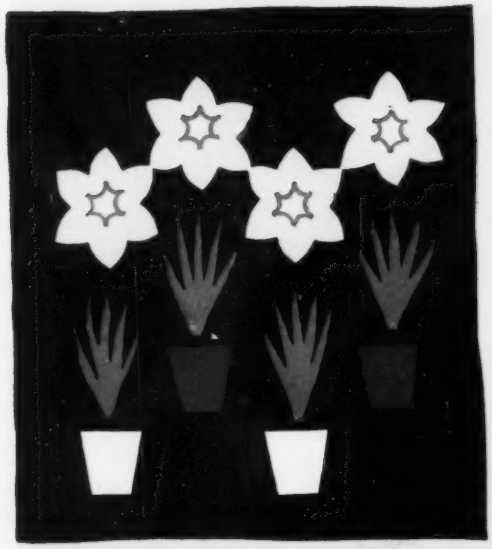
You're looking at crystals of Sterling TNA-5 Reagent.. the reagent that produces clear, brilliant colors in neutral or alkaline dyebaths . . . the reagent that's unexcelled for dyeing cotton,rayon or any blend of these fibers with wool . . . the reagent that improves color quality when used with direct, sulphur or naphthol dyes. Sterling TNA-5 is *more than 99.9% pure*, free of calcium or magnesium impurities that can cause "salt streaks" or uneven shades. An International Salt Company representative will show you how TNA-5 can save money on dyestuffs and improve results in *your* dyehouse. He is experienced in the use of TNA-5, either dry or as brine, and can furnish plans for a TNA-5 dissolver to suit your needs. Contact district office nearest you.

INTERNATIONAL STERLING TNA-5 SALT COMPANY

"A STEP AHEAD IN SALT TECHNOLOGY"

BUFFALO • BOSTON • CHARLOTTE • CHICAGO • CINCINNATI • DETROIT • NEWARK • NEW ORLEANS • NEW YORK • PHILADELPHIA • PITTSBURGH • ST. LOUIS • HEADQUARTERS, CLARKS SUMMIT, PENNSYLVANIA

PROCION YELLOW GRS ®



an AHCO specialty

for full reddish-yellow shades
and as a component of dark greens,
browns, fawns and greys

* high tinctorial strength
* excellent dyeing properties
* good fastness properties
* non-dusting

DYE & PRINT by all the
usual Procion processes

PROCIONS—the original fiber-reactive dyes

Ⓟ Patents applied for in the main industrial countries

Quality
PRODUCTS
Integrity

Write for Samples or Information

ARNOLD, HOFFMAN & CO., INCORPORATED

55 Canal Street, Providence, Rhode Island • Est. 1815
A Subsidiary of Imperial Chemical Industries Limited, England
West Coast Representative: Chemical Manufacturing Company, Incorporated of California

ICI

DEVOTED EXCLUSIVELY TO TEXTILE WET PROCESSING

ADR

Knitting Arts Exhibition Number

45th KNITTING ARTS EXHIBITION

AN attendance in excess of 15,000 is anticipated for the 45th Knitting Arts Exhibition, to be held at the renovated Atlantic City, NJ, Convention Hall April 24-28. New products, improved processes and increased services will be stressed at the booths of more than 200 exhibitors.

Sponsors of the Knitting Arts Exhibition are the National Association of Hosiery Manufacturers, the Underwear Institute, and the National Knitted Outerwear Association.

A selected list of exhibits which, it is felt, will be of chief interest to readers of AMERICAN DYESTUFF REPORTER follows. Advance information about displays and those expected to be in attendance at booths is included.

Show hours are shown on page 32.

A view of the Atlantic City Auditorium during the 44th KAE

AMERICAN ANILINE & EXTRACT CO, INC

Venango & F Sts
Philadelphia, Pa
Booth 737

This exhibit will consist of textile sizes, antistatic yarn lubricants, synthetic detergents, and finishing materials for the throwing, knitting and weaving trades.

In attendance: William J Duddy, president; R D McCarty, vice president; Lynn Kippax, sales manager; Martin H Silberman, technical director; William Franks, James H Jones and Eric K Hellstrom, sales representatives.

●

AMERICAN CYANAMID CO

Fibers Div

111 West 40th St
New York 18, NY
Booth 751

On display: Knit fabrics and fashions containing Cyanamid's Creslan acrylic fiber; principle feature of exhibit will be Creslan Theatre, featuring Microdyeoscope presentation of dyes buildup.

In attendance: Alden R Loosli, general mgr, Fibers Div; William H Kieffer, director of marketing; Martin B Friedman, manager, merchandising dept.

●

AMERICAN DYESTUFF REPORTER

44 East 23rd St
New York 10, NY
Booth 210

Textile publication.

In attendance: Myron D Reeser, Herbert A Stauderman, Charles A Whitehead and Norman A Johnson.

●

AMERICAN ENKA CORP

350 Fifth Ave
New York 1, NY
Booth 86

On display: Enka nylon and rayon yarns and fibers in hosiery, panti-stockings, half-hose, sport shirts, and warp knit fabrics in brushed and unbrushed doeskin and suede effects, including foam laminates.

In attendance: Frits Prakke, general mgr, nylon div; M Boylan Carr, director, nylon textile marketing; W M Pomeroy Jr, nylon sales mgr; S W Holmes, merchandising director; Jay Kaner, advertising and merchandising mgr; K J Martus, nylon merchandising; H Z Heuston, home furnshings merchandising; O E Herzog, mill merchandising; E W Martin, C R Hall, Don Campbell, district mgrs; Sid Smith, J B Steen Jr, nylon sales; D J Godehn, marketing technical director.

●

THE AMERICAN LAUNDRY MACHINERY CO

Cincinnati 12, O
Booth 930

The following will be exhibited: Hydrex automatic washer-extractor, which, in a 29-minute cycle, washes, rinses and extracts 50-lb (dry wt) loads, ready for ironing or drying with operation entirely automatic except for addition of washing supplies on signal; two-speed 42″ × 54″ removable horizontal partition Cascade washer, which quickly, thoroughly and safely washes 225-lb (dry wt) load of all types of fabrics, including silks and woolens; Monex extractor, which removes water from 80-lb (dry wt) loads of washed work to prepare it for ironing or drying; Thermatic drying tumbler, which dries 50-lb (dry wt) loads of washed and extracted work in a short automatic cycle.

In attendance: R L Gerling, Eastern sales manager, and R S Shaffer, manager, Philadelphia office.

AMERICAN VISCOSE CORP

1617 Pennsylvania Blvd
Philadelphia 3, Pa
Booth 62

On display: Family of new Avisco fibers including Avron high-strength rayon, Avril staple rayon, and Avlin multicellular rayon. The role of Avisco acetate yarns in the knitting industry will be stressed. Other Avisco products to be shown are Avistrap, Tyrex rayon tire cord and Avisco cellophane.

In attendance: George Storm, M V Macfarlan, C J Geyer, C S Brown, C J Mills, N A Cocke, S H Rose, R F Thayer, J R Durhin, J P Mervine, C H Scott, D A Davis, and J C Folsom.

●

JOSEPH BANCROFT & SONS CO

Wilmington, Del
Booth 115

On display: A wide range of fabrics and garments approved to carry the Ban-Lon trademark, such as lace, warp knit and circular knit fabrics, sweaters, sportswear, half-hose, lingerie, sleepwear and jackets.

In attendance: L W Rainard, E H Shattuck, F A Cooper, R A Pici, E P Mersereau, J M Huling, D A Graham, W M Teta, H L Johnson, J D Bradley, A A Bebedek, C E Vollmar, W A Geiler, and A L Trifunovic.

●

EUGEN BELLMAN GmbH

Hagen-Haspe, West Germany
Booth 851

On display will be the Dyeboarder Colorplast-Type Senior which is said to effect the automation of hosiery finishing by scouring, dyeing, setting, finishing, and drying. It is suitable for the treatment of ladies' hosiery of all deniers, including crepe and stretch material.

In attendance: Curt Kronsbein

●

CANNON MILLS, INC

Kannapolis, NC
Booth 201

On display: Combed, carded, natural, dyed cotton yarns; blended heather yarn.

In attendance: W C Cannon, J C Williams, T R Smith, D A Long, Dolan Frye, John Morrow, Roy Dellinger, C V Albright, J C Bertlett, F A Dusch, Henry Crumbliss, J F Russeil, and J W Turner.

●

CELANESE CORP OF AMERICA

180 Madison Ave
New York, NY
Booth 70

On display: Arnel 60 double knit; tricot employing the use of Arnel and acetate filament yarns in combination with other fibers used as a basic yarn for Arnel and Corval; Arnel and acetate in blends or combinations with other fibers; Celaperm.

In attendance: Hamilton Macauley, George Hein, William O'Neil, Robert Grovet and, John Gross.

●

COURTAULDS (ALABAMA) INC

600 Fifth Ave
New York 20, NY
Booth 1004

On display: Corval cross-linked rayon and Coloray solution-dyed rayon in new end uses in knit goods.

In attendance: Homer Carter Jr, George Stanley, Royston Dunford, Tom Ethridge, George Grant, Earl Stewart, Carl Webber, Chuck Radcloffe, Eileen Hilferty, and Rose Simmons.

CUMMINGS-LANDAU LAUNDRY MACHINERY CO, INC

305-317 Ten Eyck St
Brooklyn 6, NY
Booth 304

The following will be exhibited: a 36″ × 54″ stainless steel washer, a 30″ stainless-steel extractor, a 37″ × 30″ steam-heated reversing drying tumbler, and a washer-extractor.

In attendance: Eugene Cummings and David Green.

Mattapan Sta, Boston 26, Mass

•

DIXIE MERCERIZING CO

Chattanooga 1, Tenn
Booth 501

On display: Cotton yarns and products, dyed Turbo yarns and products, Creslan and Creslan blends and products, Spring 1962 colors; staple spun Orlon.

In attendance: Walter Logan, Fred Frank, E R Kimball, W C Henderson, Preston Dalgish, J Blackwood Caneron, Wiliam A Eipper, Richard Sussman, Irving Sussman, Robert Voight, George Veness, George Bryan, Wilbur D Evans, Mark Munsill, Alexander Cameron, Lee Hill (export), William H Michael, and George Porges.

•

E I duPONT de NEMOURS & CO, INC

Wilmington 98, Del
Booth 301

This dispay will be divided into four areas—hosiery, sweaters, flat knit, and circular knit—with space reserved for an information booth and an area for discussions with customers.

•

EWING-THOMAS CORP

Rose and Walnut Sts
Chester, Pa
Booth 201

Ewing-Thomas Corp will share a booth with Cannon Mills, Inc. On display will be mercerized yarn, natural, bleached and dyed, specially designed for knitting and weaving purposes.

In attendance: James L Rankin, Jesse W Jester, George W Fiss, Richard E Rankin, David Thomas, Jacob F Metscher, and George E White.

•

W F FANCOURT CO

516 S Delaware Ave
Philadelphia 47, Pa
Booths 606, 608

A scale model of the new Fancourt plant will be displayed as well as materials that have been finished with Fancourt products. Data sheets will be available.

In attendance: John L Fancourt, Frederick T Broadhurst, Thomas Lindley, Donald Loeber, John McFarlane, Robert Rhodes, Willard Sawyer and Claude Wolff.

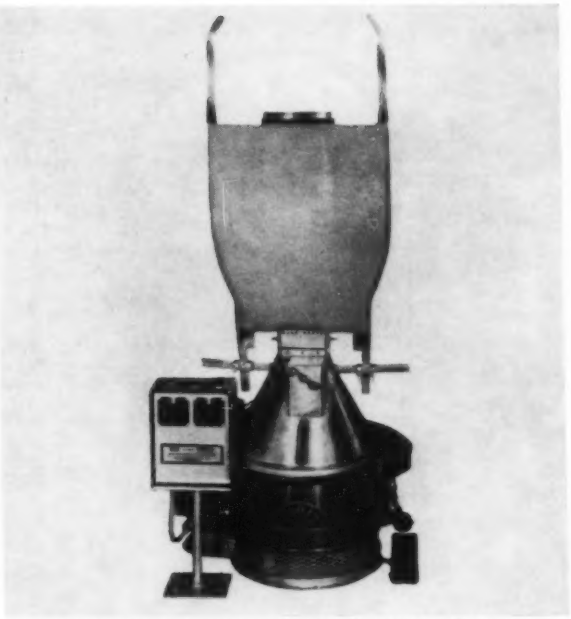
•

FRANKLIN PROCESS CO
Div of Indian Head Mills, Inc

Howard and Clearfield Sts
Philadelphia 33, Pa
Booth 741

On display: Package-dyed Colorbred yarns for the knitting industry.

In attendance: Earl Rushon, Division mgr; R B Lusignea, director of sales; R F Strahley, mgr, Chattanooga plant; C W Dawson, New England sales supervisor; John G Edwards, Greenville sales supervisor; R S Allen, S W Cable, Bryon Drummond, Douglas Grant, H B Hall, Leonard Grindrod, J R Garner, E T Wrenn, Edward Ingle, R C McCarty and Edward Connell, salesmen.



Paris steam-air sweater finisher for sizing, shaping and pressing sweater strips

GARMENT FINISHING EQUIPMENT CORP

18 Brattle St
Cambridge 38, Mass
Booths 832, 834, 836

The Paris steam-air finisher, reengineered throughout for speedier operation and precise sizing and shaping, will be shown.

In attendance: Felix Renick, Richard S Dickie Jr, and Kenneth G Dunn.

•

GASTON COUNTY DYEING MACHINE CO

Stanley, NC
Booth 647

On display: Jet Dyeing Machine (see page 63 of March 20 issue of ADR).

In attendance: G H Hacker, R P Craig, G G Hacker, W J Newcomb, A P March, and J R Angel.

•

GENERAL FOAM CORP

640 West 134th St
New York 31, NY
Booth 667

On display: Urethane interlining foams for laminates.

In attendance: Werner Norman, Stanley Herschman, and Herbert Zeller.

•

GLOBE DYE WORKS CO

4500 Worth St
Philadelphia, Pa
Booth 806

On display: Package-dyed Sayelle, blends, Arnel, worsteds, and cottons.

In attendance: Thomas S Greenwood, William B Taylor, Albert Stutzke, and Richard W Foltz.

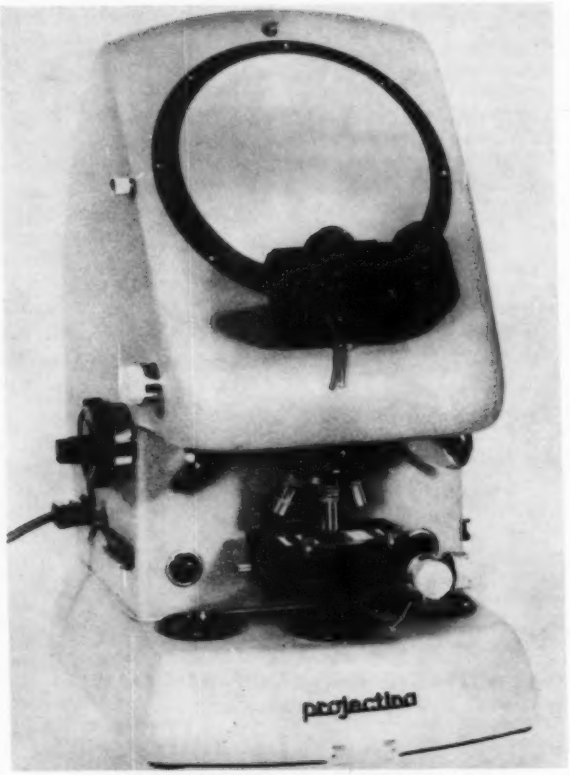
•

HENRICI LAUNDRY MACHINE CO

10 Henrici St
Mattapan Sta, Boston 26, Mass
Booth 809

On display: Henrici knitwear laundry washing machine for washing, fulling and scouring operations. Also, one special knitwear drying tumbler with time- and temperature-control equipment.

In attendance: Jack Sheridan.



Model 4014B Projector and Microscope with binocular eyepieces

HUDSON AUTOMATIC MACHINE & TOOL CO

137-139 38th St
Union City, NJ
Booth 465

On exhibit will be Projectina testing instruments including a combination projector/comparator/microscope for research and quality control of fabrics, yarns, and fibers; spinneret inspection, yarn comparison attachment; wall screen projection for training purposes and textile schools. Instruments shown will be the Model 4014, Model 4016, Model 4011, Model 4014B and a Polaroid photo attachment.

In attendance: C A Hepp, president, and H Peter, vice president.

•

INDIAN ORCHARD FINISHING CO

34 Front St
Indian Orchard, Mass
Booth 812

On display: An exhibit of mill operations in both piece-dyed and circular-dyed knit fabrics.

In attendance: Abe Young, Allen Liebowitz, Allen Kneeland.

•

THE INDUSTRIAL DRYER CORP

P O Box 850
Stamford, Conn
Booth 132

On exhibit will be an automatic "H-W" conditioner for twist setting, lofting and regain, which will be equipped with damper control so that it will be possible to automatically pre-heat, condition and dry or exhaust at the end of the operating period.

In attendance: R G Leininger, P H Friend, F W Caesar and J R Tutt.

INTERNATIONAL TEXTILE MACHINE CO

4102 Monroe Rd
Charlotte, NC
Booth 819

Products to be exhibited are: Autoboard automatic hosiery (socks) boarding machines; Inspectomatic automatic inspection machine for ladies' seamless and full-fashioned hosiery; Pairomatic electronic pairing computer for pairing ladies seamless and full-fashioned hosiery; specialty transfer machines for ladies seamless and full-fashioned hosiery.

In attendance: John W Glaze Jr, president; Ernest E Abernathy Jr, vice president; W Garland King, salesman; W Dan Phillips, serviceman; Joseph E Kienel, Specialty Mfrs and Sales Co, Acworth, Ga.

•

JORDAN MILLS INC

2702 12th Ave
Columbus, Ga
Booth 613

On display: Knitted fabrics made from dyed yarns spun by Jordan Mills.

In attendance: R C Jordan Jr, W A Livingston, and salesman.

•

KEYSTONE DYEING CO, INC

3215 Amber St
Philadelphia 34, Pa
Booth 1019

On display: Stretch synthetic fabrics—fur blend.

In attendance: Frank B Murphy, Henry Kline, and Henry Kline Jr.

•

KLAUDER WELDON GILES MACHINE CO

Adams Ave and Leiper St
Frankford
Philadelphia 24, Pa
Booth 947

The following will be exhibited: a 200-lb KWG-Duo-Flo circulating-type skein dyeing machine, a 100-lb paddle wheel dyeing machine, a yarn carrier truck, and a dyehouse truck.

In attendance: Thomas Bell, vice president and general manager; Robert Bell, vice president, sales; John Rascher, sales representative.

•

LAUREL SOAP MANUFACTURING CO, INC

Tioga, Thompson and Almond Sts
Philadelphia, Pa
Booths 713, 715

Featured will be soaps, oils and finishes for the knitting trade. On exhibit will be a series of lubricating and conditioning emulsions and trough solutions for all natural and synthetic fibers and yarns, processing compounds for men's and ladies' hosiery, soap, softeners, flame-retardant and water-repellent finishes, and a complete line of package dyeing assistants and finishes. Also to be shown will be Metrosol RX and Catamine SF for washing wool and Orlon sweaters; new softeners for natural and dyed yarns; new emulsion lubricants for knitting yarns; and Polylube FFN, a new, improved finish for nylon and Dacron warp-knit and resin-finished fabrics.

In attendance: Clarence E Bertolet, president; William H Bertolet Jr, treasurer and manager of sales; A Henry Gaede, William H Bertolet 3rd, Albert H Rant, J Paul McGinty, Fowler Jackson, Joseph J Murphy and Philip B Hudson, representatives.

LEATEX CHEMICAL CO

2722 N Hancock St
Philadelphia 33, Pa
Booth 100

On display will be chemical processing assistants for knitting, bleaching, scouring, dyeing and finishing of knit goods.

In attendance: Maurice M Guertin, L Kevin McChesney, Troy F Robbins, Joseph A Clark, Harry Buckley, Samuel J Guertin, John F Rieder and John McChesney Jr.

•

MORGAN DYEING & BLEACHING CO

Avenue E
Rochelle, Ill
Booth 512

On display: Skein- and package-dyed yarns of all types, plus finished garments produced from both skein- and package-dyed yarns. Also a motion picture showing worsted yarn during actual dyeing process.

In attendance: I A Rolfe, Harry W Loefgren, George F Gaede, and V E Degryse.

•

JOSEPH PERNICK CO, INC

5419-23 Flushing Ave
Maspeth, L I, NY
Booth 805

On display will be a 72" measuring and examining machine to be used for all types of laminated fabrics as well as tubular knits. This machine operates at speeds of from four to 40 yards per minute and is said to deliver a firm straight roll ready for shipment.

In attendance: David Pernick, Mark Pernick, David Haft and Peter Haft.

•

PHILADELPHIA METAL DRYING FORM INC

Josephine & Pear Sts
Philadelphia, Pa
Booth 665

•

REFINED PRODUCTS CO

624 Schuyler Ave
Lyndhurst, NJ
Booth 1001A

Resin finishes for knitted fabrics will be shown.

In attendance: B H Bossidy, A J Ramunda, G Fine, G Maynard, G Purdy, S Van Haste, J Birch and D M Musser.

•

RHODIA, INC

60 East 56th St
New York, NY
Booth 205

On display: Rhovyl fibers, yarn, and knitted fabrics.

In attendance: L Hochstaedter, sales & merchandising mgr.

•

RICHMOND OIL, SOAP & CHEMICAL CO, INC

1041-43 Frankford Ave
Philadelphia 25, Pa
Booth 267

A complete line of chemical specialties for spinning, coning, knitting, scouring, dyeing and finishing of all types of yarns and fabrics will be shown. Various processed pieces of fabrics and finished garments will also be exhibited. Featured will be Rubberknit oils used in various stages of processing yarns and fabrics, which will be used in conjunction with rubber, to prevent degradation; coning lubricants for use on Textralized yarns, textured yarns, seamless hosiery welt yarn, etc; new scouring and softening agents for knitted outerwear; other new developments.

In attendance: William Alkus, Morton W Levi, John W Schenkel and James W Lederer; Noel Fawcett and Richard L Fawcett, Fawcett & Co, Ltd, Canadian representative.

•

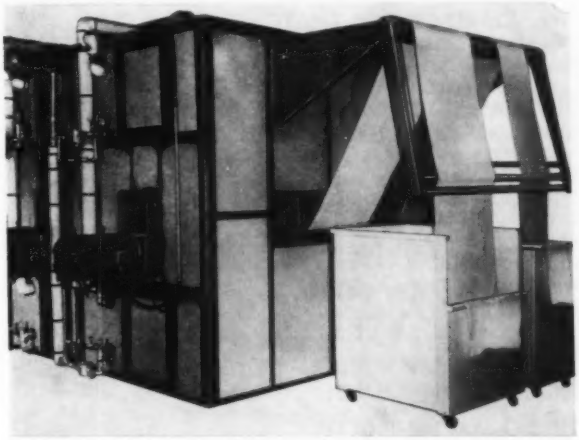
SACO-LOWELL SHOPS

Textile Machinery Div

Greenville, SC
Booth 78

On display: Fleissner dryer for tensionless drying of tubular knit goods.

In attendance: J W Hubbard, W F Lowell Jr, G F Wilcox, B H Kennedy, E T Cansler, B J Zalkind, A K Bonge, A L Park, E L Thomason and H O Whitten.



Fleissner dryer

•

SANITIZED SALES CO OF AMERICA, INC

53 East 34th St
New York 16, NY
Booths 835, 837

Featured will be a presentation on the benefits of Sanitized hygienic chemicals especially formulated for the knitting industry. New low-cost chemicals have recently been developed and are currently in use by many major manufacturers, converters and finishers. Also on display will be finished fabrics.

In attendance: M Ressner, B Nusbaum, L Kahn, Mrs B Hilton, Miss J Sands, Miss J Valente and Mrs R Humphreys.

•

SCHOLLER BROTHERS, INC

Collins and Westmoreland Sts
Philadelphia 34, Pa
Booth 701

The Dura Beau, Schollerized, Lanolized and Hysorb finishes for full-fashioned, seamless and stretch hosiery will be featured. Also on display will be finishes for knitted, woven and "wash-and-wear" fabrics.

In attendance: E S Atkinson, L M Boyd, E J Fitzgerald Jr, A T Glenn, William Jackson Jr, Robert Martin, A Harold Miller, D E Robertson, J O Sweitzer, C H Schuettler, W R Sargent and W S Truette, salesmen; L O Koons, president; E E Rettberg Jr, vice president.

•

SELLERS DYEING CO

Saxapahaw, NC
Booth 60

SONOCO PRODUCTS CO

Hartsville, SC
Booth 209

Cones, tubes, cores, spools, bobbins and other paper specialties will be displayed.

In attendance: H M Adams, B H Biggs, C L Burnham, W J Durkin, O F Fayne, D R Godshalk, W S Hawkins, A P Hearon, J J Hughes, W R Peacock, and J C White, salesmen; D D Dunham, assistant public relations and advertising manager; W K Lewis Jr, sales coordinator, research and development; J A Durkin, division sales manager; J A Reagan, advertising manager; G K Lewis, sales supervisor; C W White, director of sales; C H Campbell, vice president in charge of sales.

•

STANDARD-COOSA-THATCHER CO

Chattanooga 1, Tenn
Booth 541

•

TUBULAR TEXTILE MACHINERY CORP

33-61 54th St
Wodside, L I, NY
Booths 101, 105, 204

The complete line of Tube-Tex equipment for the processing and finishing of circular knit fabrics will be shown. Featured will be the Tube-Tex Reelax jet dryer, tensionless calendar, matching machine and extractor pad. The new Tube-Tex Tri-Pad and Tube-Tex open-width finishing machine will also be emphasized.

In attendance: E Cohn, D Foreman, L Rothberg Jr, G LoBell, E Goodman, F Allhouse, E Weeden and M Barbiasz.

•

TURBO MACHINE CO

Lansdale, Pa
Booth 151

The following machines will be exhibited:

A new electro finisher, utilizing an aluminum cylinder and a three-roll cradle, which permits a 140° wrap around of the material while processing.

A new spreader-steamer, which incorporates a fully flexible control system to regulate both speed and feed during processing.

A new padder-extractor.

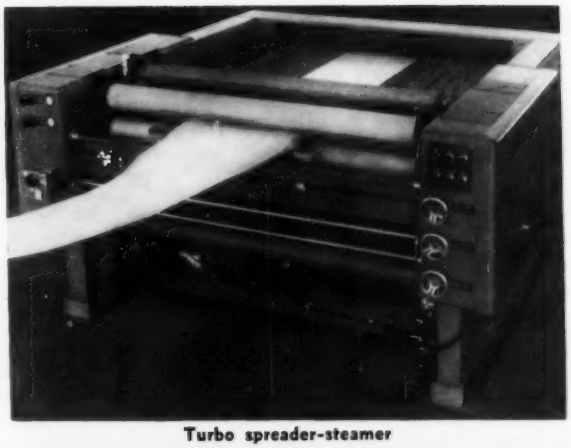
A new automatic framing machine for high-pile fabrics.

A new automatic festooning machine, which is said to eliminate costly and time-consuming hand operations in festooning high-pile fabrics.

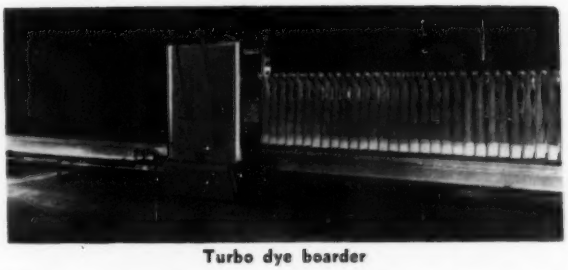
Dye Boarder DB 120, which combines into one operational cycle preboarding, dyeing, post boarding and drying.

A 50-lb rotary dyeing, washing machine (12 RD-60).

In attendance: L Schierenbeck, president; C D Schierenbeck, executive vice president; E J Berger, vice president, sales; R G Myers, treasurer; W K Wyatt, vice president, engineering; John Stafford, sales manager; Edward Hughes, DeHaven Butterworth, William Schwarze and John Emlikian, sales representatives; Francis Dougherty, manager, engineering; Alex Pegon, engineering supervisor; Frank Yale, project leader; John Longaker, service manager.



Turbo spreader-steamer



Turbo dye boarder

•

VENANGO ENGINEERING CO, INC

8311 Torresdale Ave
Philadelphia 36, Pa
Booth 565

A 25-lb newly designed combination washing and dyeing machine will be shown. This machine is said to present an entirely new concept of wet processing and is furnished with a variable-speed drive and an adjustable reversing timer. It is expected that this machine will be of particular interest to dyers of sweaters, garments and hosiery and to processors of narrow fabrics. Also to be shown will be package-dyeing equipment for both standard and high-temperature operation and a cabinet-type control panel with a CycleLog temperature controller.

In attendance: William Stegers, president, and William A Fuchswanz, sales manager.

45th KAE SHOW HOURS

Monday, April 24 ——— 12 noon to 6:00 pm
Tuesday, April 25 ——— 12 noon to 10:00 pm
Wednesday, April 26 ——— 10 am to 6:00 pm
Thursday, April 27 ——— 10 am to 6:00 pm
Friday, April 28 ——— 10 am to 1:00 pm

This article, which has been written from the point of view of the dyer and finisher, reviews the various steps in the processing of tricot fabrics on the types of equipment in general use today. It follows the dyeing and finishing steps from the greige cloth to the finished roll.

Although certain products manufactured by DePaul Chemical Co are recommended in this article, similar products on the market are applicable.

PRACTICAL HINTS FOR PROCESSING TRICOT

HERBERT LUBER

DePaul Chemical Co, Inc

SINCE the introduction of flat knit fabrics, there have been many changes and improvements, both in quality and production methods. Many will recall the original hot-water setting of acetate tricot. This method is still in practice in a few plants. It is effective on Arnel fabric, when beck dyed for special reasons. There was also the steam autoclave method for nylon tricot, which has given way to post setting with elecrical calrod units and hot air.

With the introduction of the wide-width Burlington dye units, many changes took place immediately. Costs were reduced and production greatly increased, but with this new system came many new problems. This method outmoded the use of tacking machines, which were used for stitching the selvages together before scouring and dyeing. This tacking operation was necessary to eliminate creases and dye streaks that usually formed near the selvages due to curling. Cloth that is dyed on a full-width machine has no opportunity to form creases. Most plants today have these dye units either in the regular open machine or the high-pressure enclosed type.

PROCESSING PROCEDURE———The usual processing procedure is a follows: The greige cloth is sorted and placed in wide trucks or on a wide table directly in line with a scray unit. The scray unit is placed before the tension rolls to allow for variable tensions before entering the wet-out tank. When cloth is placed in trucks, the pieces are sewed end to end according to the size of the dye lot. If laid up on tables in line with the batching machine, they are sewed piece to piece as the cloth is running into the scray box.

As the cloth passes through the wet-out tanks, it feeds onto the pins of the batcher. It is then stretched to the required width, which is governed by various factors, such as finished width required and the overall width of the holes in the large beam on which the cloth is wound at the rear of the batcher. It is advisable to sky the cloth to a height of ten to twelve feet before entering the scray unit to help remove creases and wrinkles. By so doing, one assures that the cloth will enter the pins in a smooth condition, resulting in better production on the batcher.

The installing of several scrimp rollers before the wetting-out tank, and just before cloth enters the pins, will result in reducing the down time on the batcher due to stoppage. It is also advisable to install flow-control and temperature-control valves on the wet-out tank. The use of a small amount of good scouring agent, such as Depco Scour MI, in the wet-out tank also is recommended. This is to be fed in by continuous flow. It will assist in removing soil as the roll is standing before going to the Burlington unit.

After the roll is batched, a mesh cloth is placed around it and this is secured by winding narrow nylon selvage around it. Another method utilizes a flexible stainless-steel mesh jacket that is secured with bolts. The batcher can produce more than required for dyeing as a rule, so it is necessary to have a low stand between the batcher and dye units. This is constructed so as to hold several rolls at one time. As the rolls are placed there before dyeing, they then rotate at about two rpm. This channels the water from all draining to the bottom.

Next, the wet roll is placed in the Burlington unit by means of an overhead lift. After the roll is in place, the water valve is opened to a water level just covering the metal beam. This will allow the air to escape from the beam. Then, the beam is sealed by means of closing the disc on the end of the beam. The water level can be determined by the size of the roll. Next, the pump is started and the temperature control set at 90°F. The chemicals are then added for a one-bath scour and dye operation. (A typical formula would include such products as Depco Scour MI or Palopal with Depco Level #52). Allow the batch to circulate for ten minutes and add the dyestuff according to a predetermined formula which is usually made up of disperse colors. Allow this to circulate another fifteen minutes with temperature still at 90°F. Now, set temperature control at 190°F or the temperature best suited for a particular style. Variation of temperature rise should be determined by the shade and depth of color.

After dyeing temperature is obtained, it is advisable to turn the beam. The average dyeing time, which allows for one color add, is approximately one and one-half hours. White and light pastel shades sometimes require less time after standard formula has been established.

When proper cloth match is obtained, it is advisable to open cold-water valve to overflow and reduce temperature to about 140°F. Then, the pump is shut off and the tank drained. Give one lukewarm wash and change to cold water. Beam is now ready to remove from tank for extraction. If rolls are not framed immediately, they should be placed in a rotating stand.

The cloth is now ready for framing and the roll is placed in a stand before the padder; this is operated with a variable-speed control to feed cloth in a slack manner to the padder. A finish bath has been prepared in the tank leading to the padder and the cloth passes into the finish and through the nip rollers. The finish bath is made up to produce the best effects on the various styles. A formula used for 55-denier acetate is usually composed of a duller, a softening compound and an acetate weighter.

After passing through the nip rolls, the cloth passes over several stainless-steel rollers (to help adjust ten-

sion) and several scrimp rollers (to keep the cloth wide as possible as it enters the pin tenter frame). The change of tension can vary the yield of the fabric. However, there is only a small tolerance at this point because yields must be predetermined and controlled on the knitting machines. The drying and framing operation is usually done at temperatures ranging from 260°F to 300°F. This will vary according to the size and efficiency of the frame housing. The speeds also are controlled by these factors. The cloth is usually pleated off the back of the frame and is inspected as it folds with wide trucks. It is then sent to the tubing department for make up. Here, some mills prefer to roll the cloth on a wooden stick or shell at the rear of the frame and, in so doing, usually roll four to five pieces on one for the tubing operation.

NYLON TRICOT———For nylon tricot, the preparation up to the dyebath is similar to that of acetate tricot. The scouring and dyeing formula, however, is changed. De Paul Chemical Co recommends a formula of two percent Depco Scour MI, one percent Depcogel and one percent Depco Level #52. Procedure and temperature is the same as used for acetate tricot. After dyeing is completed and proper shade obtained, the roll is extracted and made ready for finishing, framing and heat setting in one continuous operation. A formula recommended by De Paul for finishing is made up of Depco Nylon Weighter L, Depcostat H and Polyemulsion WSS.

The two usual heat-setting procedures are carried out by either McCreary calrod units, which are energized to high temperatures by electricity passing through booster transformers, or by several forms of hot-air units. This setting operation, when carried out properly, will give dimensional stability that will be retained during repeated washing of the garment.

In addition to the regular finishing operation, the schreinering process recently has been introduced. This is done on a calender with controlled heat and pressure. When nylon tricot is passed through a schreiner calender, it changes the appearance of the cloth by pressing the stitches together and resulting in a solid appearance and luster.

There are many new yarns and combinations finding their way into the tricot field. Each one of these presents new problems for the processors, as well as for the manufacturers of dyes and chemicals.

In conclusion, it must be pointed out that the processing of these various styles of knitted fabrics is not a simple one. One of the main reasons for this is the variation in equipment and conditions from plant to plant.

FUTURE PAPERS

Following is a list of specially contributed papers which will appear in future issues of *American Dyestuff Reporter:*

"Energetic Interactions between Textile Fibers and Solid Soil in the Washing Process"———H Lange, Henkel & Cie, GmbH

"A Study of Hypochlorite-resistant Melamine-type Finishes"——— Sidney L Vail, J G Frick Jr and J David Reid, Southern Regional Research Laboratory

"Formamide-Formaldehyde Products as Wrinkle-Resistance Finishing Agents for Cotton Fabrics"———Sidney L Vail, J G Frick Jr, Paul L Murphy Jr and J David Reid, Southern Regional Research Laboratory

"Dyeing Unscoured Wool"———Louis I Fidell, American Cyanamid Co

"Effect of Yarn Twist and Fabric Cover Factor on Crease Recovery and Tear Strength"———P C Mehta, Ahmedabad Textile Industry's Research Association

"Dihydroxyethyleneureas as Wrinkle-resistance Finishing Agents for Cotton"———Sidney L Vail, Paul J Murphy Jr, J G Frick Jr and J David Reid, Southern Regional Research Laboratory

"Formic Acid Colloid of Methylolmelamine Resin Finish of Cotton for Wrinkle- and Muss-Resistance: Preliminary Cost Study"——— K M Decossas, O J McMillan Jr, W N Berard, W A Reeves, E F Pollard and E L Patton———Southern Regional Research Laboratory

"Identification of Fiber Blends by Infrared Spectroscopy"———M Kathryn Wharton and Florence H Forziati, Textiles Section, National Bureau of Standards

"Wrinkle- and Muss-Resistant Finish for Cotton Using Formic Acid Colloid of Methylolmelamine"———W Norbert Berard, Ethel K Leonard and Wilson A Reeves, Southern Regional Research Laboratory

"New Methods for the Preparation of Alkali-soluble Textile Materials"———Robert M Reinhardt, Terrence W Fenner and J David Reid, Southern Regional Research Laboratory

"The Swelling Action of Carriers in Dyeing Polyethylene Terephthalate Fiber"———F M Rawicz, D M Cates and Henry A Rutherford, Textile Research Center, School of Textiles, North Carolina State College

"Continuous Dyeing of Orlon Acrylic Tow"———R J Thomas, E I duPont de Nemours & Co, Inc

"The Influence of a Surface Finish on the Flex Abrasion Resistance of Cotton Sateen"———Clarence J Pope and Louis I Weiner, U S Army Quartermaster R&E Command

"Preparation and Properties of Fibrous Partial Isobutyrates of Cellulose"———Hubert St Mard, Carl Hamalainen and Albert S Cooper Jr, Southern Regional Research Laboratory

"The Effect of the Unsaturated Group on the Weathering of Chemically Modified Cottons"———Ricardo H Wade, Carl Hamalainen, and Albert S Cooper Jr, Southern Regional Research Laboratory

"Papin and His New Digester———Inventions of the Pressure Kier and Pressure Dyeing"———Sidney M Edelstein, Dexter Chemical Corp

GENERAL CALENDAR OF COMING EVENTS

ACHEMA
June 9-17 (13th International Chemical Engineering Exposition and Congress———Frankfurt am Main, Germany)

AMERICAN HOME ECONOMICS ASSOCIATION
June 27-30 (52nd Annual Meeting———Cleveland, Ohio)

AMERICAN OIL CHEMISTS' SOCIETY
May 1-3 (34th Annual Meeting, Sheraton-Jefferson Hotel, St Louis, Mo)

CHICAGO SECTION, AMERICAN CHEMICAL SOCIETY
Sept 5-8 (11th National Chemical Exposition———Chicago Amphitheatre, Chicago, Ill)

FIBER SOCIETY
April 27-28 (Spring Meeting———Georgia Center for Continuing Education, Athens, Ga)

INTERNATIONAL TEXTILE MACHINERY EXPOSITION
Sept 1962 (3rd Exposition, Hanover, Germany)

KNITTING ARTS EXHIBITION
April 24-28 (Atlantic City Auditorium, Atlantic City, NJ)

NATIONAL COTTON COUNCIL OF AMERICA
Nov 8-9 (1961 Chemical Finishing Conference———Sheraton Park Hotel, Washington, DC); Oct 3-4, 1962 (1962 Chemical Finishing Conference———Sheraton Park Hotel, Washington, DC)

PHI PSI FRATERNITY
May 4-6 (58th Annual Convention, Shoreham Hotel, Washington, DC)

PURDUE INDUSTRIAL WASTE CONFERENCE
May 2-4 (16th Conference———Purdue Memorial Center, Lafayette, Ind)

QUEBEC SECTION, CANADIAN ASSOCIATION OF TEXTILE COLOURISTS AND CHEMISTS
Apr 21-22 (Annual Meeting and Dinner, Sheraton-Mt Royal Hotel, Montreal, Que); June 10 (Annual Golf Tournament—Drummondville Country Club, Drummondville, Quebec)

SCHWEIZERISCHER VEREIN DER CHEMIKER-COLORISTEN
October 12-14 (Symposium on "Permanent Finishing 1961"——— Swiss Federal Institute of Technology, Zurich, Switzerland)

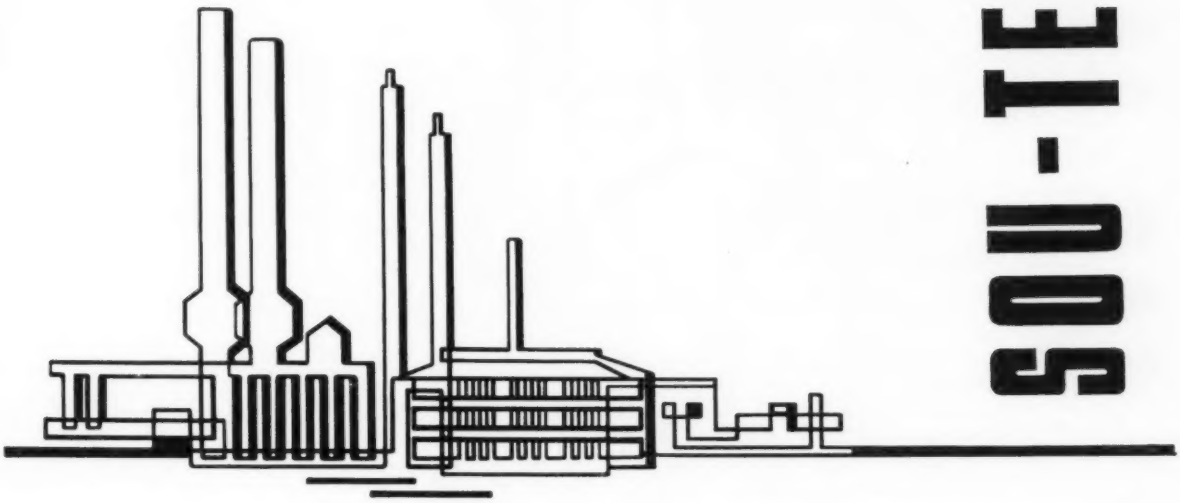
SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION OF THE UNITED STATES
May 22-24 (Spring Outing———Skytop Lodge, Skytop, Pa); June 15, Sept 12, Oct 10, Nov 14 (Luncheon Meetings———Palm Terrace Suite, Hotel Roosevelt, New York, NY); Dec 7 (Annual Meeting and Dinner———Hotel Roosevelt, New York, NY)

UNION OF PURE AND APPLIED CHEMISTRY
August 6-12 (18th International Congress of Pure and Applied Chemistry———Montreal, Canada)

WORLD CONGRESS FOR MAN-MADE FIBERS
May 15-18, 1962 (2nd World Congress, London, England)

FROM THE RESEARCH LABORATORIES OF CASSELLA

SOU-TEX



3 IDEAL LEVELING AGENTS FOR VAT DYESTUFFS

CASSOPAR SR

• Controls the exhaustion speed • retards the sodium leuco compound at low dyeing temperatures • gives leveling effect when temperature is increased • gives complete exhaustion of dyebath when normal dyeing temperature is reached

CASSOPAR KN

• Strongly reduces the exhaustion speed of the sodium leuco compound in addition to increasing the migration ability • gives excellent leveling properties especially for pastel shades • enables full exhaustion of dyebath during normal dyeing process

CASSOPAR GL

• Levels without retarding by increasing migration ability • accelerates vatting speed and gives better fixation • Materially increases solubility giving improved vat stability and better fastness properties to deep shades • levels faulty dyeings • enables high temperature dyeing of blues

Our Technical Staff will be glad to assist you in the proper selection and application of these fine leveling agents.

*REGISTERED TRADEMARK CASSELLA • MANUFACTURED UNDER LICENSE FROM CASSELLA FARBWERKE MAINKUR A.G. FRANKFURT (MAIN) • WEST GERMANY

for samples and technical literature write:

SOU-TEX CHEMICAL COMPANY, INCORPORATED

MOUNT HOLLY • NORTH CAROLINA

KEEP IN STEP WITH THE TIMES

Take advantage of the unique benefits of vinyl sulfon fiber reactive **REMAZOL** dyes

... by replacing D&D dyes

... by substituting direct dyes

... by displacing sulfur colors

... by supplementing vat dyes

REMAZOL dyes are in step with consumers' requirements and fashion's unlimited horizons.

Ask our representative or write for technical details.

CARBIC-HOECHST CORPORATION

270 SHEFFIELD STREET • MOUNTAINSIDE, NEW JERSEY

CHARLOTTE • LOS ANGELES • JENKINTOWN, PA. • WEST WARWICK, R. I.

NEW COLUMBIA-SOUTHERN H_2O_2 BLEACHING PROCESS SAVES TIME AND SUPPLIES ON COTTON HOSIERY

Barberton, Ohio—Research into improved applications for Columbia-Southern Hydrogen Peroxide is paying off for many hosiery mills in sharply reduced bleaching time and lower cost of supplies. Full-white bleached goods are being produced at lower total costs and with higher finished strengths, in just one hour compared to former cycles up to five hours.

Best of all, mills find they can put the Columbia-Southern process right to work in existing equipment without additional expense or delay.

Because each company has its own set of conditions—water, amount of soil in goods before scouring, equipment and workload—we invite you to call in your PPG-Chemical Division representative. He can make specific recommendations to help you save time and money. Of course, he's also ready and qualified to give expert guidance on shipment, storage and handling of such textile processing chemicals as hydrogen peroxide, soda ash, caustic soda and chlorine.

columbia | southern chemicals

CHEMICAL DIVISION

PITTSBURGH PLATE GLASS COMPANY

ONE GATEWAY CENTER PITTSBURGH 22, PENNSYLVANIA

DISTRICT OFFICES: Boston · Charlotte · Chicago · Cincinnati · Cleveland Dallas · Houston · Minneapolis · New Orleans · New York · Philadelphia Pittsburgh · San Francisco · St. Louis · IN CANADA: Standard Chemical Limited

PROCEEDINGS

American Association of Textile Chemists and Colorists

Copyright, 1961, American Association of Textile Chemists and Colorists

April 17,1961 No. 8

FOUNDER

LOUIS A OLNEY
(deceased)

COUNCIL OF THE ASSOCIATION

PRESIDENT ..... ELLIOTT MORRILL, Corn Products Co, 1437 West Morris St, Indianapolis, 6, Ind

VICE PRESIDENTS ..... (*New England Region*): W GEORGE PARKS, University of Rhode Island, Kingston, RI; (*Central Atlantic Region*): W S SOLLENBERGER, American Viscose Corp, Marcus Hook, Pa; (*Southern Region*): A HENRY GAEDE, Laurel Soap Mfg Co, PO Box 1083, Charlotte 1, NC; (*Western Region*): JOSEPH H JONES, Phoenix Dye Works, 4755 W 150th St, Cleveland 35, O

TREASURER ..... ARTHUR R THOMPSON, 2132 Dilworth Rd E, Charlotte 3, NC

EXECUTIVE SECRETARY ..... GEORGE P PAINE, AATCC National Headquarters, PO Box 28, Lowell, Mass

CHAIRMAN, EXECUTIVE COMMITTEE ON RESEARCH ..... CHARLES A SYLVESTER, E I duPont de Nemours & Co, Inc, Rm 8516, Nemours Bldg, Wilmington 98, Del

PAST PRESIDENTS (Living) ..... ELVIN H KILLHEFFER, P J WOOD, WILLIAM H CADY, CARL Z DRAVES, THOMAS R SMITH, WILLIAM D APPEL, HENRY F HERRMANN, C NORRIS RABOLD, J ROBERT BONNAR, GEO O LINBERG, WELDON G HELMUS

NATIONAL COUNCILORS REPRESENTING SECTIONS ..... (*Northern New England*): J J O'NEIL JR, R D ROBINSON, D H THOMAS; (*Rhode Island*) K J BRODEN, E W LAWRENCE, S H CASEY, R B TAYLORSON; (*Western New England*): T J GILLICK JR, A W GOODWIN; (*Delaware Valley*): W H BERTOLET, 3RD, J E CONWAY, J H DAVIDS, V D LYON, L K McCHESNEY; (*Hudson-Mohawk*): H G GENDREAU, F J SZUREK; (*Metropolitan*): E C HANSEN, W A HOLST, J A KOMNINOS, R E MILLER, C R TROMMER, A R WACHTER, G S WHAM; (*Niagara Frontier*): J E LOUGHLIN; (*Palmetto*): J C KING, L T KELLY, L C REYNOLDS; (*Piedmont*): F FORTESS, W E RIXON, R E RUPP, L L WYSS; (*Northern Piedmont*): E A MURRAY, C HOOPER, C L ZIMMERMAN; (*South Central*): J D MOSHEIM, J O SWEITZER; (*Southeastern*): J C COOK, R B HALLOWELL, J W RICHARDSON; (*Washington*) N GETCHELL; (*Mid-West*): W O FISCHER, J G KELLEY, A J OLSON; (*Pacific Northwest*): R E NEWMAN; (*Pacific Southwest*): W E KRAMER

TREASURER EMERITUS

WILLIAM R MOORHOUSE
PO Box 352, South Yarmouth, Mass

CHAIRMEN, COMMITTEES OF THE COUNCIL

STANDING COMMITTEES—

Executive Committee of Council	ELLIOTT MORRILL
Executive Committee on Research	CHARLES A SYLVESTER
Technical Committee on Research	GEORGE S WHAM
Publicity	EDWARD ARTIM
Appropriations	THOMAS R SMITH
Membership and Local Sections	W GEORGE PARKS
Publications	PAUL J LUCK
Corporate Membership	W S SOLLENBERGER
Constitution and Bylaws	WILLIAM A HOLST
Conventions	E I STEARNS
Technical Programs	T R FOLTZ JR & J ROWATT
Archives	SIDNEY M EDELSTEIN
Textile Education	LEONARD SMITH
Subject and Speakers' Bureau	MATTHEW J BABEY

SPECIAL COMMITTEES—

Intersectional Contest	THOMAS J GILLICK JR
Employee Pension and Retirement Advisory	ELLIOTT MORRILL
Individual Membership	H A STAUDERMAN
Olney Medal	M HARRIS
Harold C Chapin Award	SIDNEY SPRINGER
American Dyestuff Reporter Award	PAUL B STAM
Student Award	JAMES L TAYLOR

NATIONAL HEADQUARTERS

PO Box 28, Lowell, Mass
Tel: GLenview 8-8034

Executive Secretary	GEORGE P PAINE
Technical Secretary	GEORGE J MANDIKOS

LOCAL SECTION OFFICERS

New England Region

NORTHERN NEW ENGLAND ..... *Chairman*: EDWARD J McNAMARA JR, Hamilton Chemical Corp, Lowell, Mass; *Secretary*: JOSEPH S PANTO, Fabric Research Labs Inc, 1000 Providence Highway, Dedham, Mass; *Vice Chairman*: FRANK J RIZZO; *Treasurer*: WILLIAM W PENNOCK

RHODE ISLAND ..... *Chairman*: JOHN J ROARKE, Bradford Dyeing Assoc, Bradford, RI; *Secretary*: RICHARD V DUGDALE, Rohm & Haas Co, 1226 Industrial Trust Bldg, Providence 3, RI; *Vice Chairman*: CHARLES A ROBINSON; *Treasurer*: HAROLD B STURTEVANT

WESTERN NEW ENGLAND ..... *Chairman*: ALBERT H RANT, Laurel Soap Mfg Co, 206 Calla St, Providence 6, RI; *Secretary*: WILLIAM H ESPELIN, 7 Hearthwood Drive, Barrington, RI; *Vice Chairman*: TIMOTHY J HORAN; *Treasurer*: BURTON C WINKLER

Central Atlantic Region

DELAWARE VALLEY ..... *Chairman*: CLARENCE A SEIBERT, Scholler Bros, Inc, Collins & Westmoreland Sts, Philadelphia 34, Pa; *Secretary*: ERNST W EMPTING, Verona Dyestuffs, 351 Lancaster Ave, Haverford, Pa; *Vice Chairman*: EDWARD G HAACK; *Treasurer*: CHARLES N KUZMA JR

HUDSON MOHAWK ..... *Chairman*: FLOYD J SZUREK, Mohasco Industries, Inc, Amsterdam, NY; *Secretary*: ARMAND DI MEO, Rebel Dyeing Corp, Johnstown, NY; *Vice Chairman*: ACHILLES S MAFILIOS; *Treasurer*: WALTER DRAUTZ

METROPOLITAN ..... *Chairman*: PERCY J FYNN, J C Penney Co, Inc, 330 W 34th St, New York, NY; *Secretary*: GEORGE A JONIC, American Cyanamid Co, 48 W 38th St, New York 18, NY; *Vice Chairman*: RICHARD P MONSAERT JR; *Treasurer*: EUGENE J GRADY

NIAGARA FRONTIER ..... *Chairman*: ANTON M VIDITZ-WARD, Allied Chemical Corp, Elk St, Buffalo, NY; *Secretary*: DANIEL E BOLAND, Western Electric Co, Inc, Buffalo, NY; *Vice Chairman*: NICHOLAS MOHORUK; *Treasurer*: JOHN NIHILL

Southern Region

NORTHERN PIEDMONT .. *Secretary pro tem*: JAMES E GREER, Burlington Mills Corp, Greensboro, NC

PALMETTO ..... *Chairman*: RICHARD E RETTEW, Polymer Southern, Box 2184, Greenville, SC; *Secretary*: E THOMAS McILWAIN, Ansbacher-Siegel Div, Sun Chemical Co, Rock Hill, SC; *Vice Chairman*: NEAL A TRUSLOW; *Treasurer*: WILLIAM E BALDWIN

PIEDMONT ..... *Chairman*: VINCENT B WRIGHT JR, North Carolina Finishing Co, PO Box 1100, Salisbury, NC; *Secretary*: E P LAVOIE, Morningstar-Paisley, Inc, PO Box 3622, Charlotte, NC; *Vice Chairman*: V B HOLLAND; *Treasurer*: ROBERT L WARD

SOUTH CENTRAL ..... *Chairman*: RICHARD J TYRRELL, Peerless Textile Div, Burlington Industries, Cleveland, Tenn; *Secretary*: W JACK WELBORN, Riegel Textile Corp, Trion, Ga; *Vice Chairman*: LOWELL SHIVE; *Treasurer*: ARTHUR R WILLIAMS

SOUTHEASTERN ..... *Chairman*: WILLIAM B AMOS, The Jefferson Mills, Inc, Jefferson, Ga; *Secretary*: RICHARD M JONES, Chemical Services, Inc, Box 8007, Station F, Atlanta, Ga; *Vice Chairman*: LEON TIGLER; *Treasurer*: RICHARD D SEED

WASHINGTON ..... *Chairman*: LOUIS R MIZELL, Harris Research Labs Inc, 6220 Kansas Ave, NE, Washington 11, DC; *Secretary*: FLORENCE H FORZIATI, National Bureau of Standards, Textiles Section, Washington 25, DC; *Vice Chairman*: ESTHER L BATCHELDER; *Treasurer*: EDMUND M BURAS JR

Western Region

MID-WEST ..... *Chairman*: JAMES L McGOWAN, Morgan Dyeing & Bleaching Co, Rochelle, Ill; *Secretary*: ARTHUR J ANDREWS, Keystone Aniline & Chemical Co, 321 North Loomis St, Chicago 7, Ill; *Vice Chairman*: FRANK S STOVER; *Treasurer*: JAMES E MILLER

PACIFIC NORTHWEST ..... *Chairman*: HUBERT N SHEA, Jantzen, Inc, 411 NE 19th Ave, Portland 14, Ore; *Secretary*: JOHN F SHELTON, Great Western Chemical Co, Portland, Ore; *Vice Chairman*: ROBERT WELSH; *Treasurer*: DALE W KIMSEY

PACIFIC SOUTHWEST ..... *Chairman*: ANGUS H ROBERTS Nopco Chemical Co, Hermosa Beach, Calif; *Secretary*: RICHARD C DEMUTH, Dye Masters Inc, 1511 W Florence Ave, Inglewood 3, Calif; *Vice Chairman*: DAVID D SANDERS; *Treasurer*: FREDERICK L WILHELM

STUDENT CHAPTERS

Auburn University, Bradford Durfee College of Technology, Clemson College, Georgia Institute of Technology, Lowell Technological Institute, New Bedford Institute of Technology, North Carolina State College, Philadelphia College of Textiles and Science

Piedmont Section———

AUTOMATIC COLOR CONTROL APPLIED TO HOSIERY PROCESSING*

J S CHRISTIE
Proctor & Schwartz, Inc
Philadelphia, Pa

INTRODUCTION

The Electrocolorset Process for finishing nylon hosiery has been developed to scour, dye, finish, set, and dry hose in one continuous, automatic operation.

In the early stages of the project, Proctor & Schwartz recognized that, in order to fully utilize the savings and product improvement possibilities of this relatively high-speed process, proper control instrumentation would be necessary. However, when the control of dye concentration was attempted, instrumentation and systems which were available for the regulation of color were found to be lacking in precision, sensitivity, and/or convenience of operation. In fact, there was no color control suited for commercial processing.

This situation has resulted in our carrying on a fairly extensive program of color-control-system development concurrently with the development of process techniques and machinery.

The purpose of this paper is to describe the sequence of developments by which we arrived at our present control system, the problems associated with this approach, and the results of our efforts in this field.

DEVELOPMENT BACKGROUND

Our first research (in 1949) was a continuation of work started by the late Sydney Bailey at the Bailey Dye Works in Philadelphia. The two machines developed for this work were modifications of the 1948 Proctor Preboarder. It was a batch-type operation; that is, up to 24 stockings were boarded, the chamber lowered, dyeing and setting operations took place, pressure exhausted, chamber raised, and hosiery stripped. To this sequence scouring and rinsing were added. Processing solutions were applied in a variety of ways—complete immersion of forms, heavy spray, and finely atomized spray were all tried.

The dyeing solution was pumped from an open tank to the pressure process chamber and returned; either continuously or at the end of the dyeing cycle. Color was controlled entirely by manually weighed-out initial formula and additions based on previous test experience. This sufficed during the period when our main object was to prove that pressure dyeing of hosiery was feasible, but it became obvious that some automatic dye metering system would be necessary for a successful commercial process.

Two methods of control were tried —the most direct was to automatically meter additions to replace the amount of dye which had exhausted on the hose each cycle. This method requires that the type and number of stockings be identical for each batch so the dye usage rates are constant, and demands a very accurate metering system. The other method was to measure and control the actual concentrations of color in the dye solution by photo-electric means.

Since the latter offered the possibility of eliminating the aforementioned requirements and also of reducing the chance for operator error, we have concentrated our efforts on this method. We helped to design and build (in cooperation with Richard Hunter, formerly with the Gardner Research Laboratories) a dye-concentration-measuring instrument. This was a comparator-type optical device, which, when manually balanced, measured the relative concentration of yellow, red and blue dyes between standard and sample dye cells. The instrument and a sample dye solution circulating system were continuously improved until we established the practicability of dye concentration control by transmission measurement.

This, of course, made more promising the possibility of developing a continuous (versus batch) hosiery-finishing system. To this end, we designed and built the pilot model of our Electrocolorset. The machine was rated at about 35 dozen pairs of hose per hour. It was with this machine that we, with the help of dyestuff and chemical manufacturers, solved many of the problems of continuous scouring, rinsing and dyeing at high temperatures.

A dye-concentration measuring instrument was made to our specifications for this machine by the General Electric Company utilizing the optics and amplifier from the G E Spectrophotometer. We decided on this in preference to our previous instruments because of the proven sensitivity and precision of this system.

We designed the dye solution sampling and stock dye adding system utilizing the output signal of this instrument for on-off control.

When we developed the large (150 dozen/hour) machine, we used the same type of optics in the color-control system, but expanded the control action from on-off to floating-proportioning type.

The Electrocolorset process in its present form (see Figure 1) uses a pallet with 24 stainless-steel forms as a basic material handling unit. The pallet is boarded and manually pushed to one side. From that point, a series of air-cylinder-operated transfers and roller conveyors automatically transport the pallet to the feed end of the process chamber, through an air lock (called the feed end vestibule) into the pressure vessel, successively through the scour, three rinses, and the dye spray sections and out through the delivery end vestibule.

It should be noted that the operations through the vestibules are the only intermittent events in the process. The pressure inside the cham-

*Presented before the Piedmont Section at Charlotte, NC, on September 24, 1960

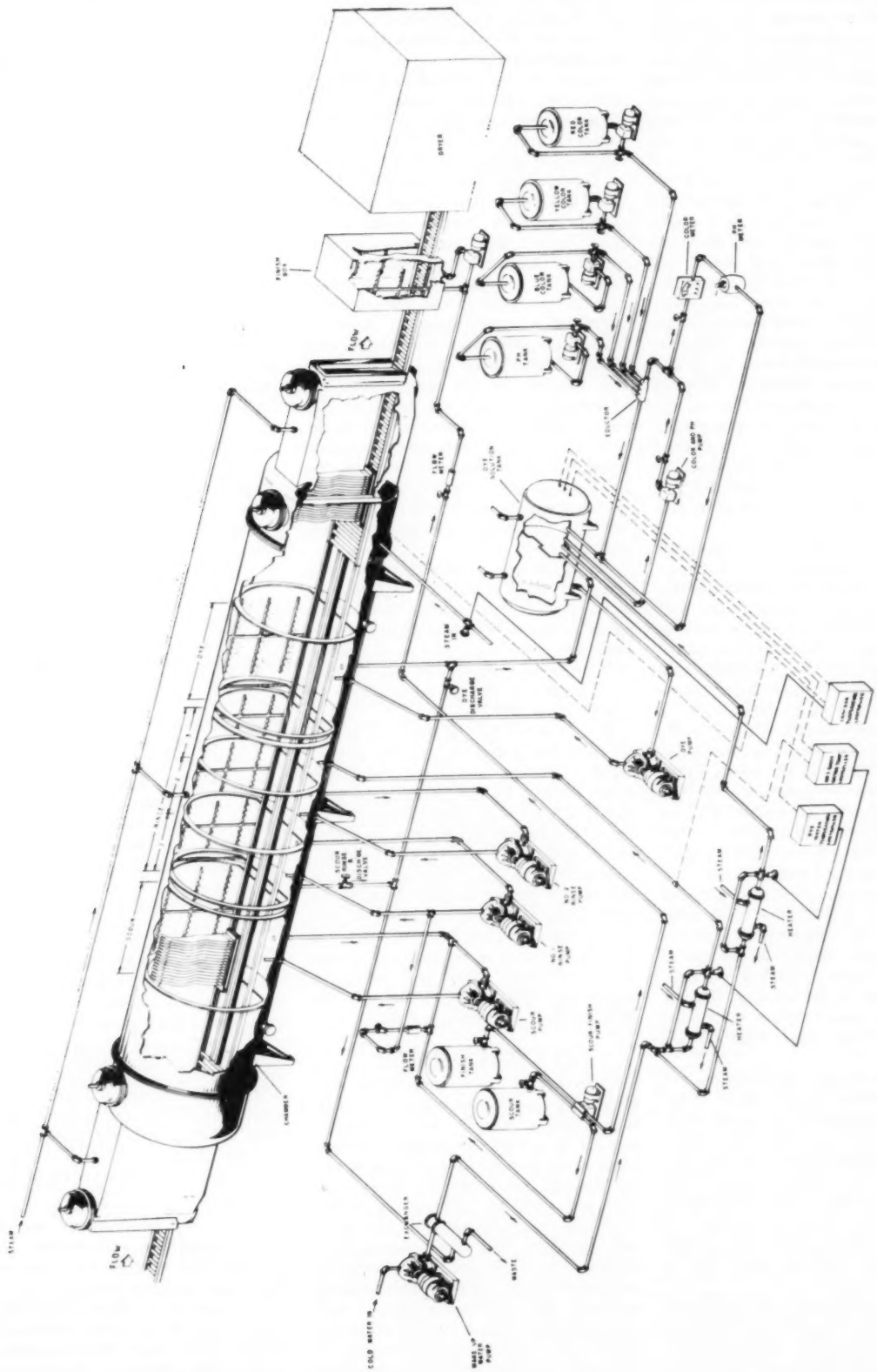


Figure 1
Method and apparatus for the setting, dyeing and finishing of hosiery—Electrocolorset Process

ber, all spray action, and the movement of pallets through the processing sprays are continuous. The cycle of the feed end vestibule is as follows: With the pallets in position outside the outer door, steam is exhausted from the vestibule. The outer door opens and pallets are fed into the vestibule. The outer door closes and steam is admitted to the vestibule until the pressure equals that in the main chamber. The inner door opens and the pallets are fed into the main chamber. The inner door closes and the cycle is completed by again exhausting the steam from the vestibule. The delivery end vestibule operates in a similar manner. The pallets continue through finish spray and drying operations which are done at atmospheric pressure, and then to one of the stripping positions where they are automatically tilted for this manual operation. There are 11 boarding stations giving some flexibility of operation with various lot-size distributions.

Since the processing is carried out in a pressure atmosphere at between 225°-250°F, one of the greatest problems has been finding chemicals which are efficient at and withstand these conditions. The most successful scour solution, to date, consists of a high-temperature cloud point combination of nonionic detergents, a metal chelating agent and a pH buffering salt. This solution is continously circulated through the scour spray nozzles. After impinging on the forms, the solution drains into a sump at the bottom of the chamber. This sump acts as a constant head reservoir for the spray pump. There is a constant make-up of fresh solution at approximately 2% of the total flow.

The first two rinses are of the recirculating type, similar to the scour section. They operate with a counteruow make-up water supply coming from the #3 rinse section. This section uses all fresh water with no recirculation.

The dye-spray system is again similar to the scour section. The sump for the dye section is a closed tank external to the main chamber. This serves as a mixture reservoir for the return from the spray section, the stock-dye additions, the pH control solution and the make-up water.

The finish spray booth, using fine atomizing-type nozzles, also has a circulating system.

Processing times are: one and one-half minutes for scour, two minutes each for rinsing and drying, one-third minute for finishing, and five minutes for drying. The stockings are exposed to pressure chamber conditions for a total of seven and one-half minutes.

All of the water used in the system enters through heat exchangers. The first extracts the heat from the used rinse, scour & dye solutions being discharged. This is a counterflow system which recovers 75% of the heat available. The second is a condenser used to recover some of the heat from the vestibule exhaust steam. This exchange system very materially reduces steam consumption below what would otherwise be required. Rinse-water is used at maximum efficiency by having the entire discharge of the #3 rinse section supply the #2 rinse. After recirculating through the spray nozzles many times, this is discharged to the #1 rinse where it is again recirculated before discharging through the heat exchangers. As the hosiery becomes cleaner, therefore, it is sprayed with the same, but progressively cleaner rinse water.

Much of our research time was spent, in addition to developing adequate liquid flow systems, and nozzle spray patterns, on the design of vestibule door and conveyor mechanisms, and in finding materials which have the necessary life when exposed to the process conditions.

The search for chemicals which will impart to the hosiery the proper hand, dullness, and snag resistance when applied by the finish spray section and not cause problems of build-up on the forms has been a long one. This involves, of course, not only the selection of finish chemicals, but also the scour chemicals and dyes to be used since all have an effect on the final product. This machine, then, is a cumulation of many and varied research efforts. The one which I would like to describe in detail is the development of color control.

COLOR CONTROL

There are two basic approaches applicable to automatic color control of continuous processes; in fact, to the control of a variable in any process, continuous or not. One is to measure the desired characteristics of the end product, and by controlling some condition or conditions in the process, produce that result. In hosiery dyeing this would be the reflectance measurement of color in the finished stocking, and the controlling of dye concentration plus a variety of other items. This is exactly the function of the dyer in standard batch processing. When the process is made continuous, the job becomes increasingly difficult with increasing production rates. As full automation is approached, this requires a complex, expensive computing and control system.

I believe that eventually all high-production processes will utilize this form of control; however, the present level of knowledge in this field and the cost of such a system makes the more direct approach more desirable. This approach is to keep constant all conditions which can cause a variation in the desired result except one, it being the one which has the greatest effect. That one is then controlled at a level, determined by test, necessary to produce the desired result. In hosiery dyeing, that item is the concentration of dyes in the processing solution.

I would like to emphasize the many conditions which must be held constant in order that control of dye solution color will give reproducible control of color on the dyed product.

1) *In the dye sampling cell,* temperature and solvent optical density are critical. Since a light transmission measuring instrument cannot completely separate the effect of actual dye color from other light-absorbing media, such as emulsified oils and soil from the hosiery and other contaminants, we have spent a great amount of effort achieving proper scouring and rinsing of the hosiery before dyeing, and selecting chemicals and dyes which have a very low rate of thermal decomposition at 250°F. In addition to this, the use of continuous make-up water in the dye section tends to keep the level of contamination quite low.

2) *In the dyeing operation,* spray time, flow rate, temperature, pH, and the exhaust characteristics of the dyes themselves must be controlled.

3) *Operations preceding dyeing,* such as the degree and method of setting and twisting the fiber, the actions of scouring and rinsing and the basic manufacture of the fiber, all have an effect on the fiber's receptivity to dye and, therefore, must be controlled.

4) *The subsequent operations of finish application and drying,* which can alter the true or apparent color, must also be kept constant.

The degree of effect from any of these items will depend on the dyestuff which is used. We are presently using three standard disperse-type

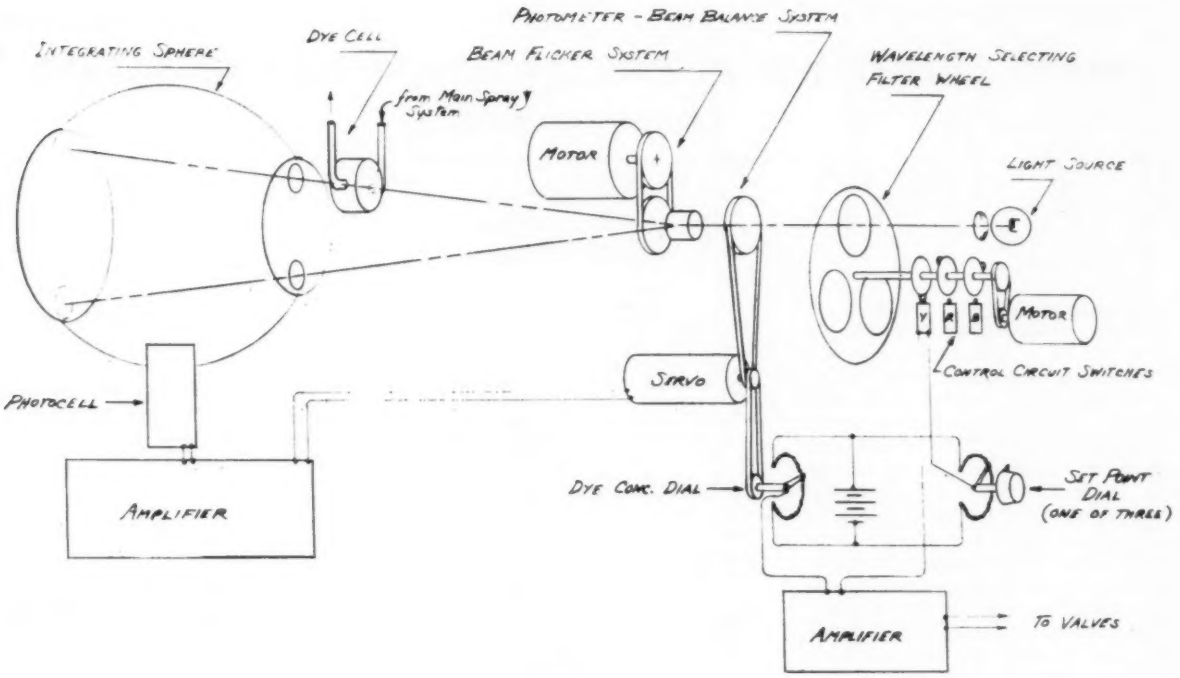


Figure 2
Color control

dyes in the Electrocolorset operation mainly because they tend to minimize the color variation due to operations before finishing. That is, those out of the control of the hosiery finisher. In the process itself, we control the temperatures of the feed-end vestibule, the main chamber, the #3 rinse spray, the dye spray, and the dye sample. The pH of the dye solution, the scour and finish concentrations, and all spray flow rates and process times are controlled or held constant.

The only remaining requirement, then, for automatic color control, is a dye-concentration sensing and control system with the proper sensitivity, precision, and stability. This, we believe, has been achieved with our present equipment. (See Figure 2). The optical system takes a beam from a single white light source, splits it into two beams and collects these in a high reflectance integrating sphere where intensity variations are sensed by a single photocell. The sample beam passes through the dye cell containing a continuously flowing dye solution. The standard beam goes directly to the sphere. The two beams are alternately flickered and the photocell-amplifier combination, which is synchronized with the flicker frequency, detects the difference in intensity caused by the absorption of light by the dye solution. This signal drives a servo motor which causes the standard beam to equal the sample, canceling out the signal. In running to this balance position the servo also drives a dial. The dial reading, then, is a measure of dye concentration. This dial position is compared to a color strength set point dial on the panel by an electrical bridge circuit. Any difference between the selected strength and the measured concentration causes a signal which opens or closes a dye stock adding valve.

In order to control more than one dye in a dye mixture, a motor-driven filter wheel is interposed in the light beam before splitting. (See Figure 3). These filters each transmit a different narrow band of wavelengths of light, and are selected so that when the #1 filter is in position, the system responds to yellow dye only. Similarly, #2 filter causes red dye response and the #3 causes blue dye response. The proper control valve circuits and set point dials are activated by control circuit switches when each filter is in position in the light beam; therefore, a single optical system sequentially controls three or more dyes in the same solution. The filter wheel rotates through all positions once every 20 seconds, measuring and adjusting the control valves. Since there is only intermittent connection between the control instrument and the valves, this is a floating control system. If different response characteristics are desired, a full proportioning or simple on-off system could be applied to the same basic measuring equipment.

To dye a particular color of hosiery, the proper concentration of yellow, red and blue are selected on the set point dials. The control system then arrives at and maintains these levels in the dyeing solution, automatically compensating for exhaust of dye on the hosiery, make-up water additions and load variations.

It should be noted that, since the instrument is measuring actual color, the concentrations of dye in the stock dye tanks are not at all critical. In fact, the strength of the dyes as received from the manufacturer is not important. The control system merely supplies more or less of the stocks to compensate for these variations.

Figure 3 shows a series of graphs of dye cell light transmission versus wavelength across the visible spectrum 380 to 680 millimicrons.

Graph "a" is a plot of the three individual primary dyes in solution at approximately the same color concentrations. Note that the point of minimum transmission of yellow is about 420 mm, red about 510 mm, and blue about 600 mm, and that the

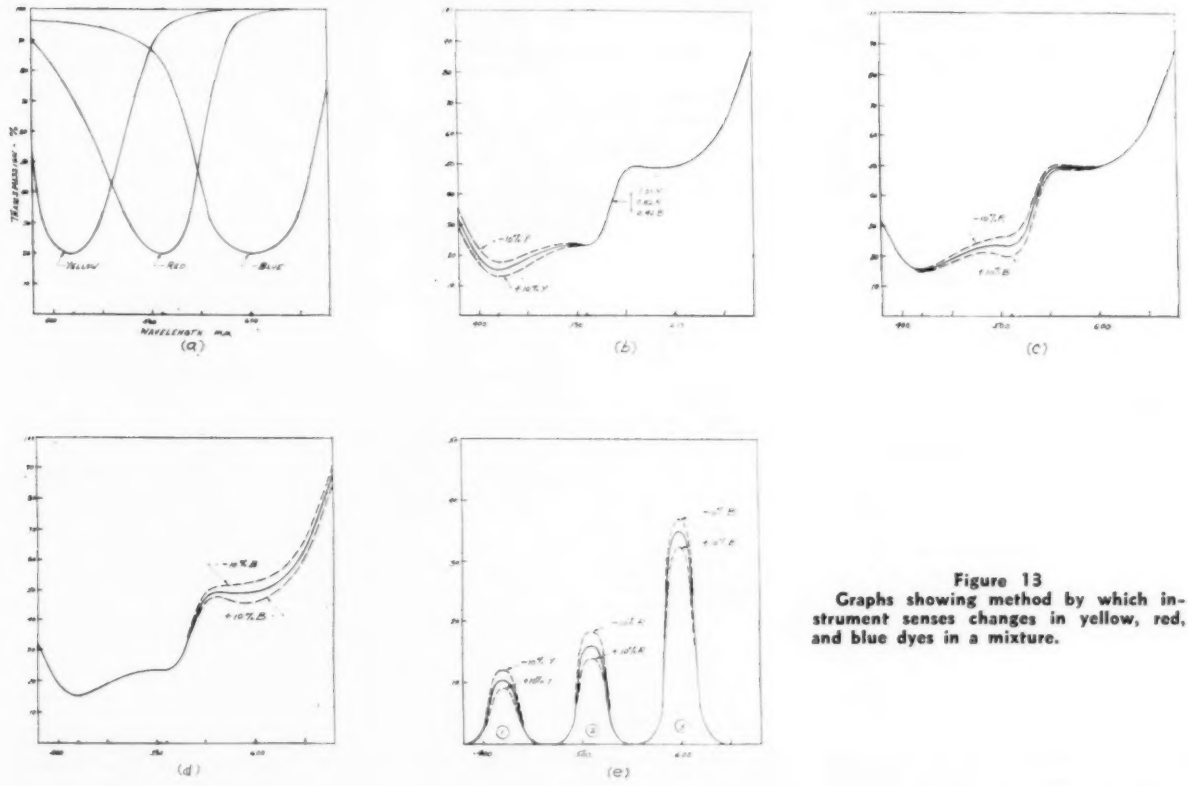


Figure 13
Graphs showing method by which instrument senses changes in yellow, red, and blue dyes in a mixture.

curves rise rather steeply toward 100% transmission (no absorption of light) on either side of these minimums.

If these three dyes are combined in the same solution in a ratio of concentration of 1.00 yellow to 0.82 red to 0.42 blue (a medium brown color for hosiery), the resultant color is indicated by the solid line in graphs b, c & d. This is the curve which must be maintained in order to produce the desired shade of hosiery. The broken lines in graph b show the effect of plus and minus 10% change in yellow dye concentration. Graphs c & d are similar for changes in red and blue dye. Since each of the dyes exhibits a marked effect on transmission in only one part of the spectrum, this point is used for measurement and control.

The wavelength filters, then, are selected to make the control instrument most sensitive to changes in concentration of a particular dye with minimum effect from the other dyes. Graph "e" represents the light actually reaching the integrating sphere through the dye cell when each of the three wavelength filters is intercepting the light beam. The solid curve (1) in graph "e" shows the light transmitted by the #1 filter dye cell combination when the solution is the proper color (represented by the solid curve in graphs b, c, & d). The broken lines show the effect of the same plus and minus 10% change in concentration of yellow dye shown in graph "b". Curve 2 in graph "e" shows similar characteristics of the #2 filter with red dye changes; and curve 3 the #3 filter with blue dye changes.

CONCLUSION

To summarize, we have attempted to develop a single, continuous, automatically controlled process for the finishing of nylon hosiery, and all major design obstacles have been overcome. The process is presently producing commercially acceptable first-quality hosiery.

AATCC EMBLEMS

YOUR membership lapel emblems, pins and tie clips are badges of distinction. Do you wear them at section meetings, national conventions, on business and social occasions?

Lapel emblems are available at $2.25 and pins at $2.50. AATCC emblem tie clasps (gold), specially boxed for gift presentation, sell for $4.00 each. All are available through National Headquarters, Box 28, Lowell, Mass.

1960 Convention———

STATUS OF NONWOVEN FABRICS IN THE TEXTILE TRADE*

HOWARD E SHEARER
Technical & Textile Service Dept
Industrial Div
American Viscose Corp
Marcus Hook, Pa

While some of the glamorous publicity given to, but not enjoyed by, nonwovens in the late 1950s has subsided, this material continues to make itself better known and appreciated for its true value in the textile trade. A reappraisal of this material by its manufacturers and consumers has brought about an overall retrenchment. Some manufacturers have deemed it expedient to withdraw. Others have been equally quick to take up the slack and increase their efforts through improved production facilities and methods of merchandising.

It is pointed out how these changes have been accompanied by major shifts in key personnel; the development of new adhesives and fiber descriptions; the introduction of improved machines for forming and bonding the web, and the expansion of manufacturer-distributor relationships. It is indicated that, while research and development of new products is receiving less emphasis than the sale of existing production, these nevertheless continue to move forward at a gratifying rate.

INTRODUCTION

THIS is the second occasion I have been honored by an invitation to address the AATCC at its national convention; the first being in Boston in the fall of 1952 on the subject, "Methods of Producing Bonded Fiber Fabrics". Since that time much has been written and many "talks" given on nonwovens by numerous individuals, more or less associated with this industry in some way. As a result, I'm afraid the subject has become somewhat "shopworn", but I trust that you will still find something of interest in my remarks today, with which I shall attempt to point out some of the changes leading to the present "Status of Nonwoven Fabrics in the Textile Trade".

During these past eight years much of the fog of secrecy that overshadowed the infant nonwoven industry has blown away, revealing isolated hazy areas which have defied penetration and some fertile regions yet to be explored.

CURRENT CONCEPT OF NONWOVENS———While most everyone in industries associated with the manufacture of fibrous products has, by now, heard of and seen examples of nonwoven materials, so as to have formed a general idea as to what the name refers, there remains no clearly defined or universely accepted limit as to their scope, or even the name by which they are to be called.

Dissatisfaction with the negative connotation of "nonwoven" as the product designation, brought about the recent holding of a prize-awarding national contest to suggest a more appropriate name. A group of impartial judges, made up of top-ranking textile executives, selected the name "Bonded Webb" as descriptive of this product. Little concerted action seems to have been directed toward its acceptance to date.

The modern conception of this product has been a fibrous web processed on modifications of textile carding equipment and given body and substance through the application of bonding agents or by the fusion of self-contained thermoplastic fibers. More recently to the concern of some in the textile industry, we have seen the increasing acceptance and inclusion within the scope of this nonwoven product, fibrous webs wet processed on modifications of conventional papermaking equipment. These wet-web materials use rayon and other synthetic fibers abnormally long for papermaking and rely on the addition of bonding fibers or chemicals, as do the dry-formed nonwovens, in order to hold the product together and contribute certain desirable properties.

Other modifications increasingly being used which broaden the earlier conception of nonwovens are the use of an unwoven bonded yarn scrim to reenforce either the wet- or dry-formed fiber web; or a needle loom which mechanically locks the fibers in the dry-formed web and onto a reenforcing scrim. Further strengthening of these materials may likewise be had by subsequent use of chemical bonding agents.

This nonwoven fabric concept has been even further broadened to include both low and high density semirigid bonded fiber mat as represented by a wide range of filters, abrasives, artificial leather and plumping material.

Whether or not these various nonwoven or Bonded Webb materials are made on modifications of conventional textile or papermaking equipment or on other machines especially designed for the purpose, they are increasing their markets in uses where woven fabrics formerly held sway, and as such are of increasing interest and concern to the textile trade.

POSITION OF THE INDUSTRY

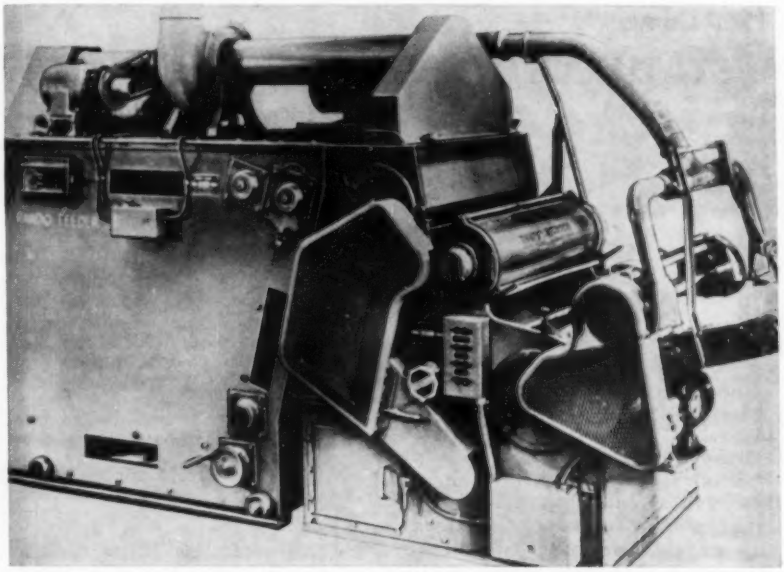
DRY WEB PROCESS——After a steady and encouraging uphill climb, the nonwoven fabric industry seemed to reach a plateau in 1959 where at a production level of around 100,000,000 pounds/year it paused to look around. It shuddered a few times when several well-known textile firms began closing down or consolidating their nonwoven fabric operations. It was further shaken with the announcement that some of the key men long associated with the development and merchandising of this material were either leaving this industry or changing their affiliation with it. However, this was "the pause that refreshes", for the industry began to take stock of itself. It discovered it was doing too much sampling and not enough selling. It seemed that everyone wanted to make, see or use nonwovens without sufficient realization that this was a new material, neither paper nor fabric to which they had been accustomed; requiring different selling as well as purchasing consideration to fit the proper made material to the intended use. It was found that a tremendous market was still open to

*Presented October 8 at the Sheraton Hotel, Philadelphia, Pa, during the 1960 AATCC Convention.

nonwovens, but it was one which could not be satisfied with any plain, narrow, bonded-web material the manufacturer might choose to make or the customer to buy. New merchandising methods had to be adopted for existing products, while new methods, new machines, new fibers and new binders had to be developed to provide products with eye appeal as well as improved service at more realistic price levels.

WET WEB PAPER PROCESS—— The nonwoven textile industry was seemingly saddled with low production rates, and for the most part with plain bonded-web materials at relatively high production costs. There remained unfilled sizable markets in the interlining, shoe and filter trades; and large potential in the bagging, housewares and apparel fields. This situation seemed to offer opportune conditions for entry into the manufacture of bonded webs by the specialty paper trade, which had much knowhow and equipment for the production of fibrous webs in wide widths and large volume at higher production rates and lower cost than seemed possible by the textile trade. Merchandising this material in the textile markets presented a major problem. This has been successfully approached in some cases by combining the manufacturing facilities of the paper manufacturers with the market acumen of textile producers by organizing separate corporations to handle and sell the product.

The specialty paper manufacturer of nonwovens soon discovered he had other problems common to the textile nonwoven producers. Fiber costs were higher than anticipated; machines had to be altered and speeds reduced; new bonding techniques had to be developed to give the quality and physical character required. These have resulted in costs which make it as unlikely that the paper system of producing nonwovens will replace the textile system as it is that the latter will replace weaving.



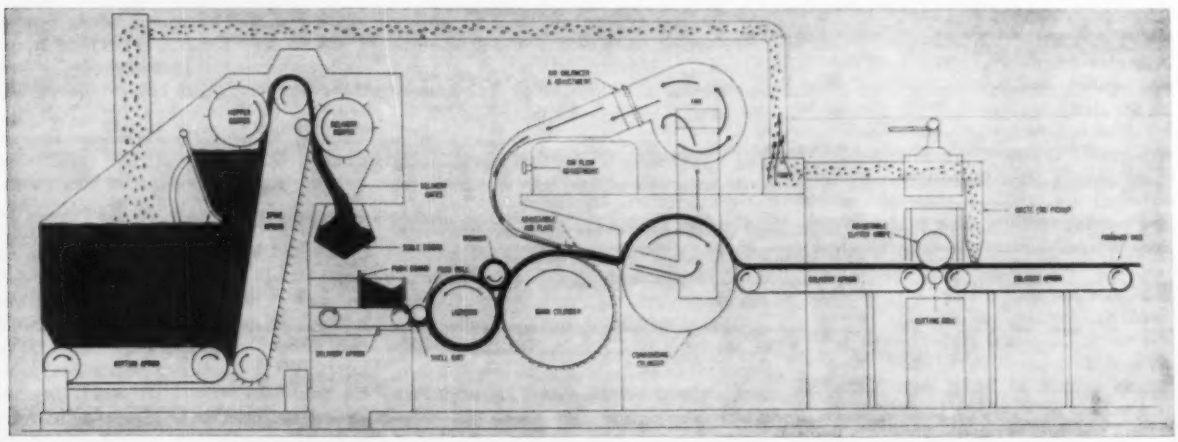
(Courtesy of The Curlator Corp)

Figure 1
Rando Feeder and Webber equipped with Fibr-Savr to trim and return fiber from the random formed web to the feeder hopper

FOREIGN PRODUCTION —— This period has been further marked by a resurgence of interest in the manufacture of nonwovens in the countries of Europe on both sides of the Iron Curtain, as well as in Japan and Australia. These countries are currently providing the largest markets for American manufacturers of nonwoven production machinery, while they develop their own equipment, fibers and bonding agents for this product. To date foreign production has not offered any serious threat to American producers of nonwovens, though it is to be expected we shall be seeing more of this.

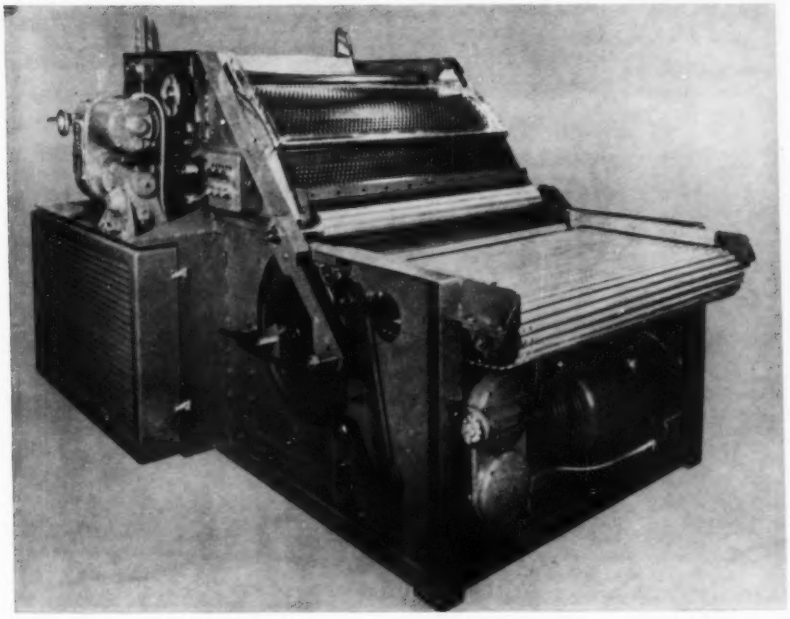
AMERICAN PROGRESS IN WEB-FORMING EQUIPMENT

Meanwhile, the nonwoven textile industry in this country has not been idling. It has crossed its first plateau



(Courtesy of Proctor & Schwartz, Inc)

Figure 2
Schematic drawing of the Proctor-Form fitted with Proctor card feeder showing carding action and random air disposition of fibers on the condenser cylinder for forming into a trimmed web on the delivery apron



(Courtesy of James Hunter Machine Co)

Figure 3

Hunter Webformer———New air-laid random web forming machine using direct or remote lap feed for delivering webs one to 12 oz/sq yd

and is moving toward higher summits. It might be well to take a closer look at some of the transitions that are taking place.

We have seen improvements in carding and garnetting equipment with production rates in some instances approaching 700 lbs per hour. We are by now familiar with the random web-forming machine as manufactured by the Curlator Corporation, about which much has been written. (See Figure 1). Its success has been followed by the more recent introduction of the Proctor-Form random web machine of Proctor & Schwartz, Inc. (See Figure 2).

PROCTOR-FORM———The Proctor-Form is made in widths of 60″, 72″, 84″ and 96″. Basically, it has a built-in carding unit consisting of feed roll, lickerin, worker and high-speed cylinder, which delivers the stock through an air transfer point to a screen cylinder against which the web is formed. It may be fed with loose stock from a hopper feeder or with a lap from a separate garnett. The nonwoven production line can be arranged so the garnett equipped with a camel-back lapper can produce unidirectional web straight off the garnett or transfer the web to a floor apron which will deliver a cross-laid mat to the right or left for producing a semirandom nonwoven fabric, or in the opposite direction to the Proctor-Form for making the non-oriented fabric. Using these various arrangements, quality webs may be produced at rates said to range upwards of 200 lbs/hr depending on the type of stock being run. It may handle stock ranging from ¾″ to 6″ in deniers from three to 15 for webs weighing from one to 15 oz/sq yd.

HUNTER WEBFORMER ——— A somewhat newer random fiber web production machine, also operating on the air-laid web principal, is the Webformer manufactured by James Hunter Machine Company. (See Figure 3). Little is known of the actual capabilities of this machine as yet. It is of simplified compact design engineered to produce quality webs in widths of 40″ and up, of one to 12 oz/sq yd at rates comparable to that of other air-doffing random web machines. As with the Proctor-Form, it can be fed direct from the garnett cross lapper or from preformed laps.

WET WEB FORMERS———Other than a brief mention of the wet-web-forming methods as practiced by the paper industry for the production of nonwoven fabrics is beyond the scope of this article. These systems employ a dilute water slurry of fiber, or pulp and fiber blends. The fiber referred to is usually in a range of ⅛″ to 1-⅛″, though those fibers over ¼″ are extremely difficult to handle unless reduced to the shorter length in processing. The pulps are usually of a wood or cotton base stock, while the fibers may be rayon, acrylic, nylon, polyester, glass or other man-made types. The webs are formed from the dilute slurry deposited on the rotating screens of machines known as Fourdriniers, cylinder machines, and Rotoformers.

To impart web strength necessary for production, as well as for final use, bonding agents must invariably be added to the slurry and/or the web as formed, or as a post saturation. These bonding compositions may contain fillers, plasticizers, pigments, etc, to improve flexibility, hand, porosity or other features.

Thermoplastic fibers or other special self-bonding fibers such as the multicellular self-bonding rayon RD 101, recently developed by American Viscose Corp, may be used to facilitate the bonding, control the porosity and impart other desirable properties. These wet-laid webs may also be formed around a reenforcing scrim of rayon or other yarns, or be laminated thereto.

While some papermaking machines are capable of producing certain types of paper products at rates better than 2,000 ft/minute and as much as 20 ft wide, the specialty paper machines used for nonwovens have production rates more in the range of 80 to 800 ft/minute with widths up to 96″. These production rates, as well as the price, which ranges around 85¢ to $3.00/lb or about 8¢ to 47¢/sq yd, are not appreciably better than those at which textile-processed nonwovens are profferred.

BONDING EQUIPMENT

Bonding is the key to all nonwovens. Without it they could not exist. It is dependent upon proper equipment for applying the bonding media, the bonding formulation and composition of material to which it is applied. The ingenuity of the nonwoven-fabric technologist in combining these has had much to do with the growth of this industry.

WALDRON SATURATOR ——— While various adaptations of padders, print rolls, calenders and automatic spray heads have been used for some time, one of the earliest saturators built especially for bonding the light fiber webs of the nonwoven industry was that offered by John Waldron, Inc. (See Figure 4). On this machine

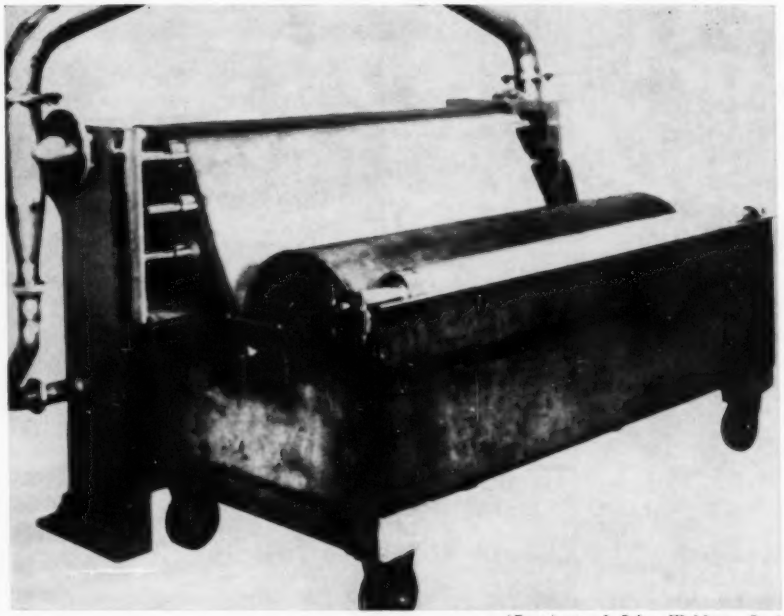
impregnation of the web is carried out between a continuous wire mesh belt and a perforated drum of stainless steel revolving in the bonding media. Excess binder is removed by vacuum extraction and reclaimed.

HUNT SATURATOR———A more recent adaptation of this controlled method of web saturation is that offered by the Rodney Hunt Saturator wherein the web is positively held and compressed between two stainless-steel wire screens as it travels through the bonding liquor. (See Figure 5). Pneumatically loaded squeeze rolls, around which the screens diverge, remove excess binder and give good release of the web.

RANDO BONDER———As a supplement to its Rando Webber, the Curlator Corporation is introducing to the trade the Rando Bonder. (See Figure 6). On this compact saturator, the web to be bonded is fed onto the bottom conveyor screen. A top screen, maintaining the same surface speed, engages and holds the web in position. The web secured between the two screens moves through the prewetting and chemical treatment zones in a horizontal position. After the chemical treatment is applied the screens diverge, letting the web follow the bottom screen through an equalizing zone prior to vacuum extraction to control the amount of wet pickup. The web then passes from the machine to the drying section of the production line.

Both the top and bottom conveyors are continuously washed to keep the chemical buildup at a minimum. The top section may be adjusted to accommodate various thicknesses of web, while unused binder material is continuously removed from the Rando Bonder and returned to a compact chemical feed system for adjustment of chemical concentrations and recycling to the Bonder. The Curlator Compact Chemical Feed System may be obtained as a separate unit for use in other chemical compounding lines.

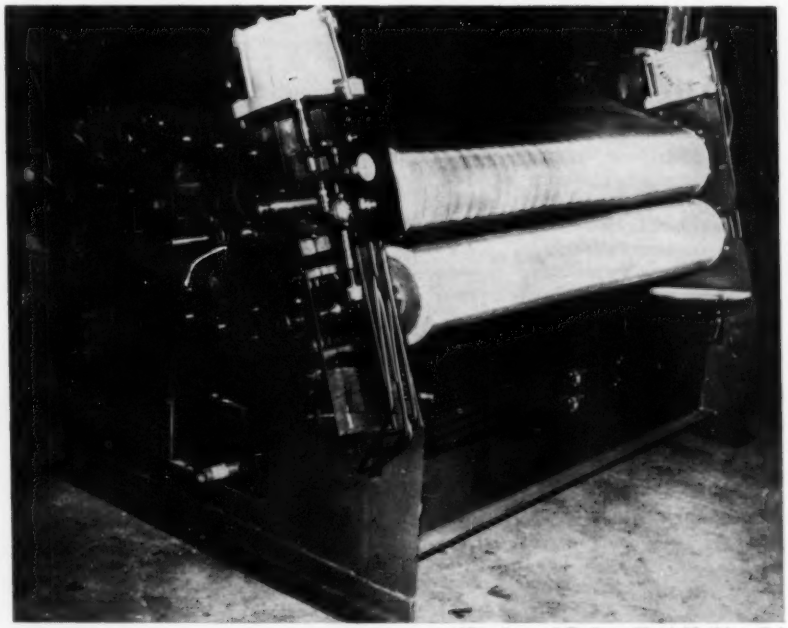
NEEDLE LOOM BONDING——— The needle loom has long been used by the hair felt trade for making heavy carpet underlay. Its rediscovery by the nonwoven fabric industry as a desirable means of mechanically bonding medium-weight random and cross-laid webs has attracted the fancy of many as offering a most satisfactory means of introducing nonwovens to the outerwear market. These machines as formerly built for the underlay trade were of a massive, slow-speed, nonprecision design. The newer models suitable for nonwoven fabric use have been scientifically engineered in lighter weight, vibration-free designs, in a number of rated widths from 45″ to 160″, capable of speeds above 700 stitches per minute.



(Courtesy of John Waldron, Inc)

Figure 4

Waldron Saturator———The preformed web is impregnated between a stainless-steel mesh belt and perforated drum

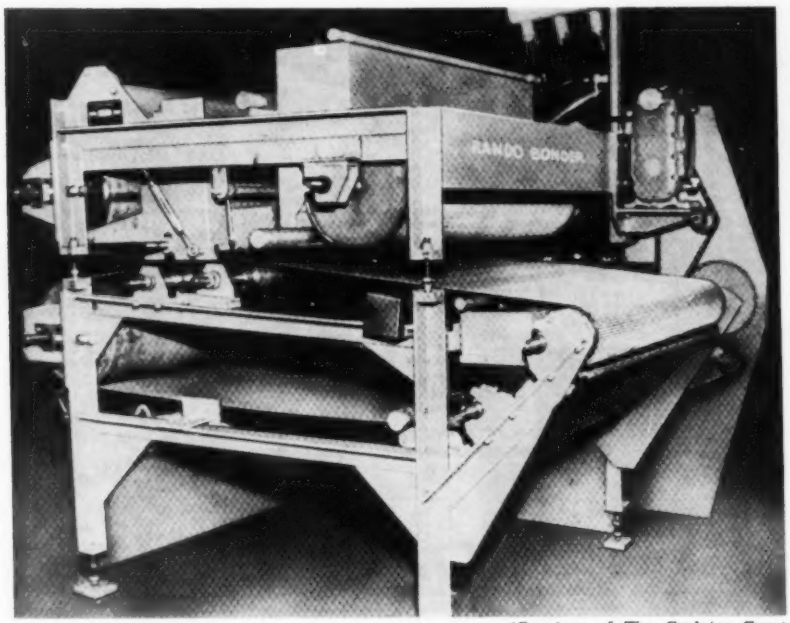


(Courtesy of Rodney Hunt Machine Co)

Figure 5

Hunt Saturator———Used for the double screen conveyed impregnation of webs under controlled pressure in the manufacture of nonwoven fabrics

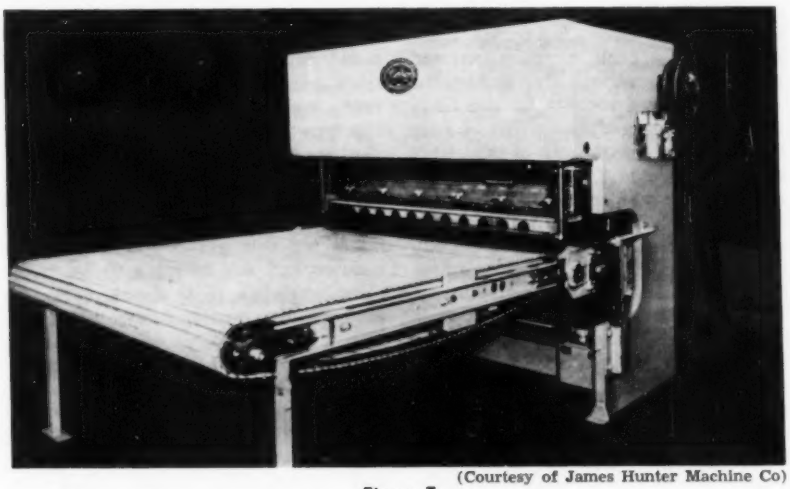
A cross-laid garnetted or random web fiber batt of two ounces or more per square yard of natural or man-made fibers forms a suitable material for needle punching. Upper limits of weight are governed by the fiber diameter, density of the mat and gauge of needle used. (See Figure 7).



(Courtesy of The Curlator Corp)

Figure 6

Rando Bonder———Newly developed vacuum extraction saturator for the uniform application of bonding agents to webs for nonwoven fabric use



(Courtesy of James Hunter Machine Co)

Figure 7

Hunter Fiber Locker———Used in needle punching webs to give transverse bonding and stability for nonwoven fabric use

As the fiber batt is advanced a predetermined distance into the machine, the needleboard descends and drives its complement of barbed needles a controlled distance through the batt. The needle barbs on their downward passage engage the fibers, pushing them through the batt and interlocking individual groups with each other. On the upward movement of the needleboard the "punched" fiber groups slide clear of the needle barbs without releasing the transverse interlocked fiber bonds. The fiber-locked batt has substantial strength and stability. However it is frequently found desirable to improve on this and give greater durability to the product by needle locking the batt to a reenforcing nonwoven or woven scrim backing. If preferred, this reenforcing scrim may be locked between two fiber mats of the same or of different weights or fiber composition.

The needle-locked material may be additionally bonded by the more conventional nonwoven fabric methods using thermoplastic fibers or chemical bonding agents. Other variations indicate the use of heated needles in the needleboard to fuse the fibers with which they make contact; and the use of coarse needles or their arrangement in various patterns to give design effects.

These needle-locked materials may be brushed, napped, dyed, and finished with equipment and procedures normally employed with woven fabrics. While the production cost of these materials may be higher than that of the thermoplastic fiber or chemically bonded types of nonwovens, the economics of manufacture should place their costs below that of conventional woven fabrics.

FORAMINOUS CONSTRUCTIONS———Other ingenious web-forming and bonding methods have been developed by individual companies for their own use. Notable among these are the foraminous unitary rayon constructions developed by Minnesota Mining & Manufacturing Co and by Chicopee Mfg Corp. These depart from the conventional unpretentious plain-bonded web with their open mesh, more fabric-like appearance and hand. Methods of preparing such products from preformed nonwoven web material, in which the fibers are capable of rearrangement by the impingement of a series of water jets while the web is retained under controlled tension to facilitate opening of selected sections of the web into a uniform mesh-like structure, are described in U S Patent 2862251 issued to Chicopee Mfg Corp.

OTHER METHODS———As a result of improving bonding techniques, another company has more recently announced the development of a multidirectional high-loft nonwoven fabric; while the promotion of a heat-fusible nonwoven of 95% rayon may be taken as another more economical approach toward the use of nonwovens in wearing apparel.

No discusion of bonding methods would be complete without at least some mention of automatic spraying techniques, used primarily in the production of low-density nonwovens for filters, padding, and stiffening purposes; and the use of thermoplastic fibers which seem to be growing in descriptions and popularity.

BONDING TECHNOLOGY

THERMOPLASTIC BONDING FIBERS———Vinyon and plasticized cellulose acetate fibers were among

the first bonding agents to be used by the nonwoven fabric industry. More recently these have been supplemented by other thermoplastic bonding types, such as low-melt polyester and polyamide fibers, polyvinyl alcohol, polyvinyl chloride, polystyrene, and the polyolefins, among others. Each possesses certain distinctive characteristics, requires variations in method of handling and imparts different values to the product in which it is properly used. They may be found in either the wet-formed or the dry-formed webs, though usually ineffective as bonding agents until subjected to chemical action or heat and pressure.

SELF-BONDING RAYON———A rather unique departure from the above as a bonding fiber is the newly developed nonthermoplastic multicellular self-bonding viscose rayon fiber of American Viscose Corp known as RD-101. This fiber, when formed into a web from a slurry on the paper system or by any of the textile methods of forming and wetting the web with plain water, has the ability to securely bond the fibers in the mat. The application of heat and pressure or other chemicals is unnecessary, other than to dry the material. This product serves excellently as a prebonded material for molding and post-bonding operations, as well as a finished article in many nondurable or disposable applications where nonwoven fabrics are used. Where greater strength, more permanence of bond and durability are needed, the addition of minor amounts of the chemical binder as normally used on nonwovens may be expected to give superior values at less cost. The fiber is supplied as 1.5 and 3.0 denier in lengths suitable for processing on either the paper or textile systems. RD 101 may be made in a low as well as a high bonding type to give different degrees of softness and fullness to the product. Its greatest use is likely to be found in blends with other fibers.

CHEMICAL BINDERS———During the past several years considerable progress has been made in the manufacture and use of the chemical binders so as to greatly improve the endurance, drape and satisfactory performance of nonwoven fabrics in particular applications. While the adhesive manufacturers have improved many facets of their compounds, bonding technology has advanced to where a single compound is now seldom used. More complex bonding formulations are the rule. As was the case during the early days of our dyeing and finishing industry, these formulations, their preparation and application are usually considered closely guarded secrets by the nonwoven fabric producer. This change has seen a greater study of the effect of particle size and gelling agents; the increasing use of cross-linking resins, the use of solvent-base adhesives, a reduction in the necessity for curing, and less use of a two-step or post-bonding operation. In some cases these have permitted more efficient operation and a reduction in costs while improving the product. Color stability, resistance to laundering and delamination and the elimination of a "papery" hand are not the problems they once were. Through the use of improved adhesive formulations, better flexibility, drape and crease resistance are being obtained, permitting a reduction in the amount of the higher-priced synthetic fibers formerly used to obtain these features, and thus enlarging the market for nonwovens.

The literature contains many references to specific latices, resins and other bonding agents which form the basis of these newer formulations. These will, therefore, not be further dealt with here.

TABLE I
Estimated consumption of fibers in nonwoven fabrics*

	(Millions of pounds)
ABRASIVES (Coated discs, pads, fabric)	1
APPAREL (Interlinings, inner and outerwear accessories, etc)	12
COATED FABRICS (Automotive, furniture, upholstery, shoes, luggage, wall covering, rug backing, tentage, etc)	12
FILTERS (Milk, chemical, air, oil, etc)	10
LAMINATED PLASTICS (Low and high pressure excluding glass)	3
SANITARY AND MEDICAL (Hospital and doctor supplies, diapers, bandages, etc)	30
TAPES AND RIBBONS (Decorative and industrial)	19
WIPING CLOTHS (Dust, polishing, shining, mopping)	6
MISCELLANEOUS HOUSEHOLD (Towels, napkins, drapes, shades, covers, pads, etc)	6
MISCELLANEOUS SMALL ITEMS (Casket lining, permanent waving, bookbinding, etc)	3
TOTAL — 102 million pounds natural and man-made bonded fiber (excluding chemical adhesives)	

*These estimates are those of the author and in no way reflect the opinion one way or another of American Viscose Corp.

FIBERS USED

Most every type and quality of fiber used by the woven fabric textile industry has been tried in nonwovens. Keeping pace with improvements in machinery and binders, and methods of using them, has been the development of special fiber descriptions for this use. Mention has already been made of some of the bonding types. These have the added advantage over the chemical binders in that they form a basic part of the fibrous web structure as well.

Leading the parade of man-made fibers for this use is rayon with its regular and self-bonding types, with other varieties in the making, suitable for both wet and dry systems of web processing. This fiber is already available for these systems in as wide a range of finishes, deniers and lengths as they can conveniently handle. It is made with smooth and serrated cross-sections, as crimped and uncrimped, bright, dull or bleached fiber of various strengths and elongations in the lowest price bracket of the man-made fibers. There is a rayon description that can be used to advantage in most every type of nonwoven fabric produced. For these reasons it is maintaining its position as the predominant fiber used in nonwovens whether the end use be industrial, household or apparel.

AMOUNT OF PRODUCTION

Nonwoven manufacturers do not release figures on their production. This together with the indefinite number of manufacturers and borderline types of nonwovens to include

TABLE II

Physical properties of some experimental examples of dry-formed bonded webs processed on textile equipment in various mills

Fiber composition[1]	Web formation	Wt/sq yd (ozs)	Breaking strength (lbs) (Grab test) MD	Breaking strength (lbs) (Grab test) CD	Tear (lbs) (Trapezoid) MD	Burst lb/sq in (Mullen)	Type binder
Rayon & acetate[3]	random-laid	1.5	13	—	0.6	7.5	Acrylic
Rayon & nylon	random-laid	2.2	16.7	17.0	3.7	27.5	Vinyl chloride
Rayon, nylon & Dacron	cross-laid	4.3	27.4	51.5	2.7	—	Synthetic latex
RD 101 rayon	unidirectional	0.7	3.5	—	0.7	—	None[2]
RD 101 rayon	unidirectional	1.6	16.9	—	2.8	—	5% Acrylic
RD 101 rayon	unidirectional	0.8	8.1	—	1.2	—	3% Acrylic
RD 101 rayon	unidirectional	2.0	5.5	—	0.7	—	None[2]
RD 101 + regular rayon	unidirectional	1.6	3.9	—	0.6	—	None[2]
RD 101 + regular rayon	unidirectional	1.5	23.3	—	1.3	—	5% Acrylic
RD 101 rayon	cross-laid	2.6	8.7	—	0.8	—	Needle loomed No reenforcement
Acrylic	random-laid	5.0	20	—	5.2	—	Needle loomed and scrim reenforced
Acrylic + regular rayon[4]	random-laid	5.0	21	—	5.0	—	Needle loomed and scrim reenforced
Acrylic + RD 100 rayon[4]	random-laid	5.0	16	—	7.0	—	Needle loomed and scrim reenforced

[1]The rayon used in each material is 1.5 denier 1-9/16".
[2]The RD 101 webs are self bonding when wet out and redried under slight pressure.
[3]Unless otherwise indicated, all blended samples are composed of equal parts of each fiber.
[4]70% Acrylic fiber.

in production estimates creates little agreement as to the actual size of the nonwoven industry. Under the current concept of nonwoven fabrics, embracing the various methods and means by which it is made, as herein discussed, I would judge that the amount of fiber presently used is running slightly better than one hundred million pounds per year or approaching 2% of the textile market in finished goods.

In Table I, I have attempted to break this current consumption down into various categories of use. From a broad viewpoint we find industrial applications consuming the majority of the poundage. As a specific class, the medical and sanitary applications probably provide the greatest dollar value. Various allied apparel applications seem to have exhibited substantial growth. Optimism persists in many quarters that this use will soon make a major breakthrough to occupy the greatest poundage position. It might well do this even without any extensive use in "streetwear" as it has only scratched the surfaces of those apparel uses it is in. For instance, we hear much of its use in interliners, where it does an excellent job, yet nonwovens supply only some 5% of the 175 million pounds of material consumed for this use. Price, in this instance, is a major problem but, with improved adhesives, higher production rates and greater use of rayon this situation is being remedied.

In Table II are presented some physical properties of experimental dry-formed bonded webs made on commercial production equipment as utilized by the textile nonwoven fabric industry. These represent merely some interesting examples of early work and by no means the ultimate of achievement.

SUMMARY

In summary it may be said that the nonwoven fabric industry has reappraised its position. Its uncharted advance has been replaced by a more careful plotting of the course to follow. While this has caused some slowing of the rate of advance over that of previous years, this advance seems more certain in quality, performance and volume.

Today there are a number of well-qualified companies ready to design, build and install complete nonwoven production lines for from around seventy-five thousand dollars up to several hundred thousand or more depending upon the versatility and production required.

The adoption of wider avenues of approach in the methods of manufacture, using improved basic materials on equipment designed for this purpose, is leading towards nonwovens offering greater value per dollar through new channels of distribution which should make an anual production of several hundred million pounds nearer achievement.

A limited supply of the following publications are available from AATCC National Headquarters, PO Box 28, Lowell, Mass:

AATCC Test Methods, Part 3, *1960 Technical Manual*, 130 pages —$2.00 per copy

List of American-made dyes, arranged alphabetically by trade name, under *Colour Index* generic names, and by prototype numbers, 130 pages—$2.00 per copy

List of textile chemical specialties, 180 pages—$2.50 per copy

1960 Intersectional Contest———

SELECTION OF DIRECT DYESTUFFS FOR APPLICATION TO UNDESULFURED RAYON STAPLE*

SOUTHEASTERN SECTION

JAMES H COX, *chairman & speaker*
Auburn Univ
CECIL B RAY
Pepperell Mfg Co
B H BRINKLEY JR
Avondale Mills
CARL R BLUMENSTEIN
Seydel-Woolley & Co
T A DAVIS
Manufacturers' representative
R K FEDERAL
General Dyestuff Co
W B GRIFFIN
Dexter Chemical Corp
RICHARD E HUDSON JR
West Point Mfg Co
WALTER M ISRAEL
Classe Ribbon Works
JAMES L TAYLOR
Georgia Inst of Technology
WILLIAM POSTMAN
Georgia Inst of Technology
GORDON E WALLACE
Woonsocket Color & Chemicals Co
WARREN E TILLER
Tennessee Corp
H GILLESPIE SMITH
American Cyanamid Co
WILLIAM B AMOS
Jefferson Mills, Inc
RALPH CHAMPION JR
Pepperell Mfg Co
JAMES C FARROW
Robert & Co Associates
R B HALLOWELL
Coats & Clark, Inc
R L HORNEY
Ciba Co, Inc
T HOWARD McCAMY
Seydel-Woolley & Co
JAMES H STRADLEY
E I duPont de Nemours & Co, Inc
LEON TIGLER
Eagle & Phenix Div
Reeves Bros
WILLIAM B WOODALL JR
Arnold, Hoffman & Co, Inc
A K HAYNES
Rohm & Haas Co
WILLIAM E FAYSSOUX
Royce Chemical Co

INTRODUCTION

THE fact that certain direct dyestuffs will undergo undesirable shade changes when applied to undesulfured rayon staple has been known for many years. This defect is usually more apparent with light or pastel shades than with dark colors.

Although a search of the literature failed to reveal any work done on the dyeing characteristics of undesulfured rayon, some information was found regarding the effect of sulfur on the physical and chemical properties of rayon. Reinthaler (*1*) states that rayon is desulfured primarily to eliminate the yellowish-grey color. Kleinert, Sieber, and Apuchtin (*2*) reported that tests made on various samples of rayon showed that, on storage, sulfides and reducible sulfur undergo oxidation to H_2SO_4, which, particularly under the influence of light, causes secondary fiber damage. In contradiction, Moncrief (*3*) states that sulfur and/or sulfur compounds up to 0.3% owf cause no tendering of rayon.

Rayon produced in many European countries is, for economic reasons, not desulfured. In fact, the Nelson Continuous Spinning Machine, manufactured in England, has no provision for desulfuring continuous filament rayon yarns. However, in the United States, the custom is to desulfur rayon during the manufacturing stages. It has been estimated that up to 0.3 cents per pound can be saved in manufacturing costs if the desulfuring process could be eliminated.

The purpose of this study was to determine which direct dyestuffs could be satisfactorily applied to undesulfured rayon staple, and conversely, to detect those dyestuffs that are unsuited because of their sensitivity to sulfur or sulfur compounds.

Because of the large number of direct dyestuffs available, the lightfastness properties were used as the criteria for the selection of the direct dyes used in this investigation. Sixty-nine direct dyes of assorted colors that were recommended by the manufacturers as having superior lightfastness on rayon were evaluated.

Regular vats, naphthols, and sulfur dyestuffs were not considered for this study, since the highly alkaline chemicals used in applying these dyes would be expected to desulfur the rayon during the dyeing operation. In addition, vat and sulfur dyes should be resistant to sulfur or sulfides, since concentrated sulfur compounds are normally used in the application of these two classes of dyestuffs to rayon staple.

To study the relative dyeing characteristics of desulfured and undesulfured rayon staple, comparative dyeings were made with sixty-nine fast-to-light direct dyestuffs. These dyed samples were evaluated for shade differences, lightfastness, and washfastness.

It was found that forty-three of these direct dyestuffs gave equivalent shades on desulfured and undesulfured rayon staple. All but three of these forty-three dyestuffs gave identical lightfastness results on both desulfured and undesulfured rayon. The other twenty-six dyestuffs produced significant undesirable shade changes on the undesulfured rayon staple. In general, the dyestuffs that incurred a shade change on undesulfured rayon staple also exhibited poor lightfastness as compared with the same dyes on desulfured rayon. The relative washfastness, however, of each of the sixty-nine dyestuffs on desulfured and undesulfured rayon staple was equal.

All the twenty-six direct dyestuffs which showed shade differences on undesulfured rayon staple were found to be metallic complexes. The remaining forty-three dyestuffs which produced identical shades on both desulfured and undesulfured rayon staple were, with three exceptions, not metallic complexes.

It was discovered that the sulfur compounds "in situ" on the undesulfured fibers do not affect the shade of the metallic complex dyestuffs. The sulfur and/or sulfur compounds must first become dispersed or dissolved in the dyebath before adversely changing the hue of the dyestuff.

*Presented October 7, 1960 at the Sheraton Hotel, Philadelphia, Pa

TABLE I

Performance of various direct dyestuffs on desulfured and undesulfured rayon staple with respect to shade change, lightfastness and washfastness.

Sample no.	*CI no.*	*Dyestuff*	*Metallic complex*	*Shade change of undesulfured with desulfured as control*	*Lightfastness (Fade-Ometer hours to appreciable break)*		*AATCC Wash Test #1 Staining of rayon*	
					Desul	*Undesul*	*Desul*	*Undesul*
1	29065	CI Direct Red 79	no	none	80	80	5-4	5-4
2	None	Solophenyl Green GL	no	none	40	40	5	5
3	None	CI Direct Orange 66	no	none	40	40	5	5
4	None	CI Direct Black 61	yes	significant	20	20	5	5
5	29166	CI Direct Brown 112	yes	significant	40	40	5-4	5-4
6	30145	CI Direct Brown 95	yes	significant	40	30	5	5
7	25410	CI Direct Violet 47	no	none	40	40	5-4	5-4
8	(Pr 612)	Solophenyl Blue 5GL	no	none	40	40	5	5
9	(Pr 629)	Solophenyl Yellow AUF	no	none	80	80	5	5
10	None	Solantine Blue Green Conc 200%	no	none	40	40	5-4	5-4
11	34180	CI Direct Black 74	no	none	40	40	5	5
12	23155	CI Direct Blue 98	yes	significant	80	60	4	4
13	25040	CI Direct Black 71	yes	significant	40	20	5	5
14	34170	CI Direct Black 56*	no	none	40	40	5	5
15	36200	CI Direct Red 84*	no	none	80	80	5	5
16	None	CI Direct Blue 80	yes	significant	40	30	5-4	5-4
17	29125	CI Direct Violet 48	yes	significant	40	20	5-4	5-4
18	29225	CI Direct Red 83	yes	significant	40	40	5-4	5-4
19	25380	CI Direct Red 75	no	none	40	40	4-4	4
20	34045	CI Direct Green 26	no	none	40	40	5	5
21	None	CI Direct Violet 60	yes	significant	40	20	5-4	5-4
22	None	CI Direct Blue 76	yes	significant	40	20	5	5
23	29025	CI Direct Yellow 50	no	none	40	40	5	5
24	19555	CI Direct Yellow 28	no	none	80	80	5	5
25	None	CI Direct Red 99	yes	significant	80	40	5	5
26	13950	CI Direct Yellow 27	no	none	40	40	5	5
27	None	CI Direct Orange 67	no	none	40	40	5	5
28	None	Superlightfast Rubine WLKS	yes	significant	40	20	5-4	5-4
29	(Pr 627)	Superlightfast Brown 3RLL	yes	none	40	30	5	5
30	None	Superlightfast Gray LVL	yes	significant	40	40	5	5
31	None	Superlightfast Blue 8GLN	yes	significant	40	30	5-4	5-4
32	(Pr 720)	Superlightfast Brill Blue 3GLST	yes	significant	80	60	5	5
33	(Pr 628)	Superlightfast Orange LLLWF	no	none	40	40	5	5
34	None	CI Direct Blue 80	yes	significant	40	30	5	5
35	(Pr 629)	Superlightfast Yellow EFC	no	none	40	40	5	5
36	40215	CI Direct Orange 39	no	none	40	40	5	5
37	31600	CI Direct Black 80	no	none	40	40	4	4
38	27720	CI Direct Black 51	no	none	40	40	5	5
39	None	CI Direct Orange 59	no	none	40	40	5	5
40	19556	CI Direct Yellow 29	no	none	40	40	5	5
41	None	CI Direct Blue 76	yes	significant	40	30	5	5
42	None	CI Direct Blue 104	no	none	40	40	5-4	5-4
43	None	CI Direct Blue 80	no	none	40	40	5-4	5-4
44	24175	CI Direct Blue 151	no	none	20	20	4	4
45	None	Pontamine Fast Orange DL	no	none	40	40	5	5
46	23155	CI Direct Blue 98	yes	none	40	20	5-4	5-4
47	None	CI Direct Blue 80	no	none	40	40	5-4	5-4
48	74180	CI Direct Blue 86	yes	significant	40	20	5	5
49	None	CI Direct Green 27	yes	significant	40	30	5	5
50	None	CI Direct Red 114	no	none	40	40	5-4	5-4
51	(Pr 629)	Chlorantine Fast Yellow RNLL	no	none	80	80	5	5
52	None	Pyrazol Fast Turquoise FBL	yes	none	40	20	5	5
53	None	Pyrazol Fast Scarlet RL	no	none	40	40	5-4	5-4
54	None	CI Direct Blue 90	yes	significant	40	20	5	5
55	None	Pyrazol Fast Brown RLN pat	yes	significant	40	40	5	5
56	31955	CI Direct Blue 30	no	none	20	20	5	5
57	None	CI Direct Green 31	no	none	40	40	5	5
58	None	Lumicrease Grey 3LR pat	yes	significant	40	40	5	5
59	None	Lumicrease Grey 3LBN pat	yes	significant	40	40	5	5
60	None	Lumicrease Navy GLA paf	yes	significant	40	20	5	5
61	None	Lumicrease Bordeaux 3LR	yes	significant	40	40	5-4	5-4
62	(Pr 629)	Lumicrease Yellow EFUL	no	none	30	30	5	5
63	None	Lumicrease Orange 3LG	no	none	20	20	5	5
64	None	Lumicrease Red Violet 3LB	yes	significant	40	40	5-4	5-4
65	None	CI Direct Green 27	no	none	40	40	5-4	5-4
66	31725	CI Direct Brown 27	no	none	40	40	5	5
67	40265	CI Direct Orange 37	no	none	20	20	5	5
68	25300	CI Direct Yellow 26	no	none	20	20	5	5
69	40215	CI Direct Orange 39	no	none	40	40	5-4	5-4

Terms for fastness to washing:
5 — Negligible or no staining of undyed rayon
4 — Slightly stained
3 — Noticeably stained

*Indicates "similar to" when used in connection with *Colour Index* names and numbers and Prototypes

EXPERIMENTAL

Samples of desulfured and undesulfured bright three-denier-per-filament rayon staple, weighing 8.0 grams each, were dyed separately with 0.1% owf with each of the sixty-nine selected dyestuffs listed in Table I. The dyeing procedure used for the application of the direct dyestuffs to these samples was as follows:

40/1 distilled water to fiber ratio

10% CP NaCl (owf)

1.0% polyethylene dodecylthioether wetting agent (owf).

Each sample of rayon staple was entered into the dyebath at room temperature and the temperature raised rapidly to 85°C. With frequent stirring, the dyeing was continued at 85°C for 45 minutes. After being dyed, each sample was rinsed thoroughly in cold distilled water and then hot air dried.

Laboratory analyses showed that the sulfur content of the undesulfured rayon staple samples was 0.05%. The desulfured rayon had 0.00% sulfur.

The dyed samples were compared for shade differences and relative lightfastness and washfastness properties.

Dyeings were repeated on all dyestuffs which were found to produce a shade change on the undesulfured rayon as compared with the desulfured rayon. The second dyeings were, however, made with the desulfured and undesulfured rayon samples in the same dyebath. The dyeing procedure was identical to that used for separate dyeings previously described.

Standard AATCC Washfastness Test No. 1 was used to evaluate the relative washfastness of the desulfured and undesulfured dyeings. The Fade-Ometer was used for measuring the relative lightfastness of the dyed samples.

DISCUSSION OF RESULTS

The results of these comparative dyeings on desulfured and undesulfured rayon with respect to shade difference, lightfastness, and washfastness are shown in Table I. It should be noted that forty-three of these direct dyestuffs produced equal shades on both desulfured and undesulfured rayon staple. The other twenty-six dyestuffs evaluated showed significant shade changes on the undesulfured rayon in comparison with the corresponding sample of desulfured rayon.

Reference to the *Colour Index* (4), or standard chemical analyses of dyestuffs not having color indices, showed all these twenty-six sulfur-sensitive dyestuffs to be metallic complexes. Since none of the direct dyestuffs which were not metallic complexes showed any shade defects when applied to undesulfured rayon staple, it appears that a definite relationship exists between the sulfur sensitivity and metallic content of direct dyestuffs. Attention is directed to the fact, however, that three of the forty-three dyesuffs which produced identical shades on both desulfured and undesulfured rayon staple were metallic complexes. These three exceptions are:

Sample No. 29 — Superlightfast Brown 3RLL (Pr 627)

Sample No. 46—CI Direct Blue 98 (CI 23155)

Sample No. 52—Pyrozol Fast Turquoise FBL.

Although the shades of the three dyestuffs did not appear to be affected by sulfur, the lightfastness of each of the above three dyestuffs was greatly reduced on undesulfured rayon staple.

It was observed that sulfur-sensitive dyestuffs applied to desulfured and undesulfured rayon staple in a common dyebath had identical shades but were intermediate in color yield between desulfured and undesulfured rayon dyed in separate dyebaths. These results indicate that the sulfur compounds "in situ" on the undesulfured fibers do not affect the shade of the metallic complex dyestuffs. The sulfur and/or sulfur compounds must first become dispersed or dissolved in the dyebath before adversely affecting the color of the dyestuff.

In regard to comparative lightfastness properties of dyeings made of desulfured and undesulfured rayon staple, it was found that all forty of the nonmetallic dyestuffs gave the same comparative lightfastness results on both desulfured and undesulfured rayon staple. Nineteen of the twenty-nine metallic complex dyestuffs showed reduced lightfastness on undesulfured rayon staple. These results are listed in Table I.

The relative washfastness of each of the sixty-nine dyestuffs on desulfured and undesulfured rayon staple was found to be equal.

CONCLUSIONS

The results of this study have shown that certain direct dyestuffs are sensitive to sulfur and/or sulfur compounds present in undesulfured rayon staple. It was found that these sulfur-sensitive dyestuffs are invariably metallic complexes. Conversely, nonmetallic direct dyestuffs perform satisfactorily on undesulfured rayon with respect to shade, lightfastness, and washfastness. It should be remembered that the vast majority of direct dyestuffs are of the nonmetallic type that are suitable for application to undesulfured rayon.

It was demonstrated that the sulfur and/or sulfur compounds must be in an aqueous phase in order to affect the color of the sulfur-sensitive dyestuffs.

ACKNOWLEDGMENTS

The Committee gratefully acknowledges the valuable contributions made to the preparation of this paper by C A Jones of Georgia Inst of Technology, Cleveland Adams of Auburn Univ, Oscar Scarbrough of J P Stevens & Co, Inc, and Frank Caylor of Celanese Fibers Co.

The Committee also greatly appreciates the cooperation received from the following companies:

Celanese Fibers Co
Geigy Dyestuffs
E I duPont de Nemours & Co, Inc
National Aniline Div
General Dyestuff Co
Althouse Chemical Co
Ciba Co, Inc
Sandoz, Inc
Royce Chemical Co

LITERATURE CITED

(1) Reinthaler and Rowe, "Artificial Silk", D Van Nostrand & Co, Inc (1928).
(2) Kleinert, T, Sieber, F, and Apuchtin, A, *Textil-Rundschau 10*, 12-6 (Jan, 1955).
(3) Moncrief, R W, "Man-made Fibers", John Wiley & Sons, Inc (1957).
(4) "Colour Index, Second Edition", The Society of Dyers and Colourists and American Association of Textile Chemists and Colorists (1956).

Employment Register

This column is open for two insertions per year, per member, without charge. Blanks may be obtained from, and filed with, the secretary of the Association, Post Office Box 28, Lowell, Mass. It is understood that these will be open to inspection by prospective employers who can obtain further information from the secretary.

61-7

Education: Three years, Philadelphia College of Textiles and Science; certificate in paper chemistry from St Joseph's College, Philadelphia, Pa.
Position desired: Technical or sales-service to greige goods, dye-finish or paper mills.
Location: Desire Carolinas, either coast acceptable.
Age: 51; married; excellent references.
4-3, 4-17

61-8

Education: Fairleigh Dickinson Univ, International Correspondence Graduate School.
Position desired: Textile colorist or technical service rep to printing trade.
Location: Metropolitan area or New England.
Age: 40; married; excellent references.
4-17, 5-1

61-9

Education: BS, Clemson College.
Position desired: Sales.
Location: South.
Age: 31; married; references
4-17, 5-1

61-10

Education: BS, Bradford Durfee College of Technology; Army specialized training, Univ of Massachusetts; Boston University—business law.
Position desired: Technical sales.
Location: Southeast or New England.
Age: 33; married; excellent references.
4-17, 5-1

Membership Applications

March 16-29, 1961

NEW ENGLAND REGION

Rhode Island Section

Senior

Alanson W Bowden Jr—Supv, Peter Karen Mfg Co Inc, Pawtucket, RI. Sponsors: J J O'Neil Jr, C Grossman.

Aloysius J Gabriel—Finisher, supt, Swan Fin Co Inc, Swansea, Mass. Sponsors: L Leonard, J W MacNeil.

Ralph A Guerriero—President, gen mgr, Swan Fin Co Inc, Swansea Mass. Sponsors: L Leonard, J W MacNeil.

Carl W Hedberg—Dyer, Atlantic Yarn Corp, Providence, RI. Sponsors: W Walter, G J Mandikos.

Arthur Pickering—Dyer, formean, Atlantic Yarns Inc, Providence, RI. Sponsors: W Walter, B J Mandikos.

Carl H Stetson Jr—Vice pres & chief of lab, National Labs for Research & Testing Inc, Pawtucket, RI. Sponsors: W G Parks, A M Cruickshank.

Lucien A Tetreault—Dyer, Swan Fin Co Inc, Swansea, Mass. Sponsors: L Leonard, J W MacNeil.

Emerson E Vanasse—Overseer finishing, Peter Karen Mfg Co, Pawtucket, RI. Sponsors: J J O'Neil Jr, C Grossman.

Peter J Winters—Dyer, Atlantic Yarns Inc, Providence, RI. Sponsors: W Walter, G J Mandikos.

Junior

Ralph J Guerriero Jr—Supv in textile finishing, Swan Fin Co Inc, Swansea, Mass. Sponsors: L Leonard, J W MacNeil.

CENTRAL ATLANTIC REGION

Metropolitan Section

Senior

Emre Bleier—Sales, Nopco Chem Co, Newark, NJ. Sponsors: E J Grady, M F Costello.

Johannes R Hohl—Mgr, production of vat dyestuffs, Toms River Chem Corp, Toms River, NJ. Sponsors: T P Higgins, T Heginbotham.

Dominic L Verillo—Ink & varnish chemist, Pope & Gray Inc, Clifton, NJ. Sponsors: H Shusteroff, A Verillo.

Associate

Clifford C Roltsch—Trainee, Geigy Chem Corp, Dyestuff Div, Ardsley, NY.

SOUTHERN REGION

Palmetto Section

Senior

Donald W Gardner—General training program, Excelsior Finishing Plant, Pendleton, SC. Sponsors: R L Ward, E P Bebeau.

William H Miller—Sales mgr, Syn-Chem Corp, Spartanburg, SC. Sponsors: E P Lavoie, C K Batson.

Piedmont Section

Senior

Kenneth C Copeland—Overseer, dyeing & blending, J P Stevens Co Inc, Hannah Pickett Plant, Rockingham, NC. Sponsors: R E Derby, G W Spicer.

David D Corn—Dyes & finishes, American Enka Corp, Enka, NC. Sponsors: L Hart, L R Graybeal.

Edwin J Greene—Sales engr, General Dyestuff Co, Div of General Aniline & Film Corp, Charlotte, NC. Sponsors: C A Bergman, C C Cayce.

William T Nescot—Rubber chemist & dept supv, Burlington Industries Inc, Blumenthal Div, Rock Mount, NC. Sponsors: J P McGinty, C E Gibson.

John W Thompson Jr—Asst supt of dyeing & finishing, Cramerton Mills Div of Burlington Industries Inc, Cramerton, NC. Sponsors: B B Moss, D J Latta.

South Central Section

Senior

Jacques C Van Audenhove—Chemist, Tennessee Eastman Co, Kingsport, Tenn. Sponsors: S E Shepard, E P VanKerckhove.

Hawain E Underwood—Sales & technical service (textile), Burkart-Schier Chem Co, Chattanooga, Tenn. Sponsors: R E Maurer, J D Mosheim.

Southeastern Section

Senior

Ralph M Persell—Asst dir, chem engr, Southern Utilization Research & Dev Div, ARS, USDA, New Orleans, La. Sponsors: W A Reeves, L W Mazzeno Jr.

Junior

Andrew G Pierce Jr—Chemist, cotton finishes lab, U S Dept of Agriculture, Sou Regional Research Lab, New Orleans, La. Sponsors: J D Reid, R M Reinhardt.

Washington Section

Senior

Samuel Shapiro—Chemist, biological, Fungus Control Section, Materials Branch, Eng Res & Dev Labs, Fort Belvoir, Va. Sponsors: F H Forziati, E McNeil.

WESTERN REGION

Mid-West Section

Associate

Thomas T Kenmotsu—Dev engr, Tee-Pak Inc, Chicago, Ill.

STUDENT CHAPTERS

Georgia Institute of Technology

J Robert Ritter—Student, Georgia Inst of Technology, Atlanta, Ga. Sponsor: J L Taylor.

Thomas S Roberts—Student, Georgia Inst of Technology, Atlanta, Ga. Sponsor: J L Taylor.

New Bedford Institute of Technology

Peter F DeCosta—Student, New Bedford Institute of Technology, New Bedford, Mass. Sponsor: F Tripp.

Foroz Nazaheri—Student, New Bedford Inst of Technology, New Bedford, Mass. Sponsor: F Tripp.

NOT AFFILIATED WITH A SECTION

Senior

Ernest G Schmidt—Chemist, Badische Anilin-u Soda Fabrik AG (BASF), Ludwigshafen/Rhein, Germany. Sponsors: J G Ferguson, J L Wyman.

Future Papers

"Science and Craft in Color"—Panel

"Modern Continuous Dyeing Processes"—Richard Kern, Sandoz Ltd

"A Study in Union Dyeing"—Northern New England Section

"New Fibers from DuPont"—Milton M Christie, E I du Pont de Nemours & Co, Inc

"Recent Developments in the Dyeing of Verel Modacrylic Fiber"—R J Fortune, Tennessee Eastman Co

"New Color-Measuring Instruments for Use by the Textile Industry"—F J Rizzo and A O Ramsley, Quartermaster Research and Engineering Command, U S Army

"The Application Principles of Acrylic Backcoating"—Charles E Hoey, Rohm and Haas Co

"Dyeing Zefran Acrylic Fiber in Blends"—F M Rawicz and S Helfand, Dow Chemical Co

"American Standard Performance Requirements for Textile Fabrics"—Ephraim Freedman, Macy's Bureau of Standards

"The Effect of Weft Yarn Twist upon the Properties of Cotton Fabrics Before and After Resin Treatment"—Edna Meshke, Univ of California

Activities of the Local Sections

Metropolitan Section Program Chairman Edwin I Stearns (left), American Cyanamid Co, chats with Arthur N Adlman, Werner Textile Consultants, guest speaker, at the Section's March 24th meeting

Edmund M Buras Jr, Harris Research Laboratories, delivering talk on subject of Soviet fiber research at Washington Section meeting of March 17

Metropolitan

PROMOTION of color in textiles must be geared to the specific needs of a specific market in order to show up in higher profit margins or larger sales volume, or both, according to Arthur N Adlman, senior associate of Werner Textile Consultants, New York, speaking at a dinner meeting of the Metropolitan Section at Rochelle Park, NJ, on March 24. Mr Adlman urged the formation of a marketing committee under the auspices of the AATCC for the purpose of studying the markets that offer the greatest potential for the use of dyestuffs and translating the findings into programs that will help create broader market opportunities for color in textiles.

He said that more and more textile men realize the power of color in their marketing and merchandising concepts. "Color is not only required to sell a product, but it must keep the product sold and create additional sales," Mr Adlman stated. "However, promotion of color *per se* is ineffectual. To be meaningful in the cash register, the promotion must be geared to a preselected and well-defined market."

"In addition to developing even better dyestuffs and processes, you can make a most valuable contribution to the progress of the textile industry by uncovering new areas of opportunity for your customers," he told the audience.

Rather than promoting the use of color in general to all phases of the textile industry, Mr Adlman suggested that a thorough analysis of end-use categories be undertaken before further color penetration of a market is attempted. He said that once the potential market has been pin-pointed, color penetration can be attempted in three ways: 1) by converting white into color; 2) by converting pastel shades to darker shades; and 3) by converting more products to fast colors.

* * *

"Some Observations of the Use of Carriers in Dyeing Polyester Fibers" was the subject of the featured speaker, Robert J Thomas, at the February 17th meeting of the Metropolitan Section held in the Terrace Room of the Hotel New Yorker, New York, NY.

Dr Thomas, who is supervisor of development for textiles and dyeing at the Organic Chemical Department's Technical Laboratory at E I duPont de Nemours & Co, Inc, Wilmington, Del, discussed the practical use of various compounds as dye carriers and the theory of their function was reviewed. Data were presented to show the effect of heat-setting temperature variations on the absorption from carrier baths of disperse-type dyestuffs by both Dacron Type 54 fibers and Dacron Type 64 fiber and of cationic-type dyes by Dacron Type 64. The behavior of cationic dyes on application to Dacron Type 64 from nonionic and anionic carrier systems was examined. Current technology in the dyeing of fabrics containing two or more different Dacron fibers also was discussed.

Washington

WASHINGTON Section held a dinner meeting—its last of the current season—at the Broadmoor, Washington, DC, on Friday, March 17, at which Edmund M Buras Jr, Harris Research Laboratories, spoke on the subject of recent Soviet work in artificial and synthetic fibers.

The material for Mr Buras' talk was derived entirely from Soviet publications. As he put it, "there is really no iron curtain around the Soviet textile industry, or around research in synthetic fibers, although there is a kind of picket fence which prevents you from getting too close." This is similar to the practice in U S research, also, Mr Buras added. Thus, scientists of the Moscow Textile Institute have published much material on the properties of a fluorine-containing fiber called Ftorlon, including details on spinning and drawing of the fiber and the molecular weight distribution in the polymer; the chemical composition of Ftorlon, however, is still secret.

The Russians are active in all major areas of synthetic fiber and polymer research, the speaker indicated. Most of their work appears to be along lines similar to those followed here, but they have turned up with a few "wrinkles" of their own. Thus, they have a continuous production method, now in pilot-plant operation, for the production of cyclohexanone oxime used in making nylon 6. Their synthesis takes minutes instead of the days required by the batch process used in the US, it is claimed.

HEAD TABLE———L to r: Esther L Batchelder, USDA, vice chairman; Nelson F Getchell, National Cotton Council, Councilor; Florence H Forziati; USDA, secretary; A Henry Gaede, Laurel Soap Mfg Co, AATCC vice president; Louis R Mizell, Harris Research Laboratories, chairman; Mrs Getchell; Edmund M Buras Jr, Harris Research Laboratories, speaker; Mrs Mizell; Alphonse Forziati

A Henry Gaede, Laurel Soap Mfg Co, AATCC vice president

Louis R Mizell, Harris Research Laboratories, Washington Section chairman

They have also developed an industrial route for making Enant, which is a nylon 7; this fiber is not being made in the US.

The Soviet scientists are also studying polyester and modacrylic fibers, Mr Buras told the audience. The chief objective of their program in synthetic fibers is not so much to satisfy consumer needs, since natural fibers are said to be in plentiful supply, but rather it is to provide high-performance textiles for commercial and industrial use.

Louis R Mizell, Harris Research Laboratories, chairman of the Washington Section, presided during the business portion of the evening. A Henry Gaede, Laurel Soap Mfg Co, AATCC vice president from the Southern Region, was introduced by Nelson F Getchell, National Cotton Council, Councilor from the Washington Section.

Eighty-five members and guests were in attendance.

Southeastern

FOLLOWING are notes taken at the February 11th meeting of the Southeastern Section (see report on page 50 of April 3 issue), at which time Gennady Kosolapoff, associate professor of chemistry at Auburn Univ, discussed "The Position of Professional Scientists in the USSR":

"There is much government influence in science in Russia. Overtones of politics are very much in evidence. Scientists and technologists occupy relatively high positions in that country. The public comes in contact with the names of scientists much more frequently in news media.

"Most young people head toward a scientific future, mainly because it is more financially attractive. There is no comparison in salaries between scientists and other types of jobs. In addition, the prestige of Russian scientists is much greater than that of people in other fields.

"The graduate schools at the various colleges are always full; and in order to gain entrance into a graduate college, a student must have an all "A" average in competing for these openings. There is no discrimination against women in the field of science with regard to pay, prestige, or position. Many women are on the various college staffs; and in the laboratories, there are oftentimes more women than men in supervisory capacities and in other scientific projects.

"In visiting colleges and universities throughout Russia two years ago, it was noted that the instruction was exceptionally good. There is no shortage of scientific apparatus and equipment, but the buildings are in a very poor state of repair. The housing of the colleges and universities is placed in a position of secondary importance, but primary attention is given to the condition and age of various equipment. In Russia there seems to be more unity of purpose than in western countries. Education and research is always placed on a high level.

"Socially, the scientists and technologists are on a higher strata than other type workers. Semiskilled workers average about seventy or eighty dollars per month; whereas chemists, physicists, engineers, etc, with an undergraduate degree, average about two hundred dollars per month. Those scientists possessing graduate degrees average from three hundred to three hundred and sixty dollars per month. Medical doctors average about two hundred dollars per month. There is no such thing as private practice for medical doctors, dentists, etc in that it is all controlled by the government. The top man in science in Russia is the president of the Academy of Science, who receives a salary of forty thousand dollars a year. There are two or three hundred lesser officials in the Academy of Science that earn between fifteen and twenty thousand dollars a year.

"All colleges and universities have a uniform standard of instruction, thus reaching a higher level of learning than is evident in the western countries.

"Since the first World War, there have been great advances in the production of intermediate chemicals. At present there are about fifteen hundred organic intermediates made in the USSR. There are no salesmen, as such, in Russia, but the various chemicals and apparatus necessary for industry are listed in pertinent literature. They are in turn ordered directly from the factories.

"There is a general feeling of the people in Russia that their country is constantly moving ahead. There seems to be very little complaining.

"The scientists, upon graduation from college, have quite a wide variety of position vacancies throughout the country. They must have a research project and provided their project shows progress, they can reasonably expect ten to twenty percent budget increases for further work. They have considerable latitude in the choice of their project. The top people in science, who are members of the Academy of Science, must publish papers on their work totaling 168 pages per year. Lesser members must publish varying quantities of data and results. The government plans the work for most lesser scientists, but about ten percent of their time may be spent on their own projects. Scientists have a certain amount of freedom in changing jobs, and they can travel around as a more opportune job becomes available. However, they must work two to three years with their original employer before shopping around.

"Business trips and vacations are planned by the employers; the people in Russia have very little control over the time of their vacation, their mode of transportation, or the type vacation they desire. Education is free and unemployment is non-existent.

"The general consensus among the people is that they would like to hear more of the Voice of America, in view of the fact that news dissemination in Russia is all from one source—the government.

"The availability of literature concerning scientific works is extremely good, but extremely poor in sources of fiction and social reading.

"Income is taxed in Russia, but not to the extent as in the United States. Gradually income taxes are being eliminated; but, of course, this is merely academic in view of the fact that prices are closely controlled by the government. Very few pepole own cars. This is because of the high cost in comparison to the average income of the population. For instance, in 1958, a four-passenger car cost about $3600.

"It was noted that Marxism is taught concurrently with other material at the various colleges and universities."

AATCC Calendar

COUNCIL

Apr 20-21 (Jack Tar Hotel, Durham, NC); April 20—Council Committees and Research Committees; April 21—(AM) Council Committees and Research Committees, TCR luncheon, TCR (PM), Nominating Committee (5 PM), Council (8 PM)
Sept 26 (Statler Hotel, Buffalo, NY); Council (8 PM)
Nov 17 (Hotel Sherman, Chicago, Ill); Council and Annual Meeting (2 PM)
Jan 26 (Hotel Commodore, New York, NY); Council (10 AM)

NATIONAL CONVENTIONS

Sept 27-29, 1961 (Hotel Statler, Buffalo, NY); 1962 (Atlanta Biltmore Hotel, Atlanta, Ga); 1963—Boston; 1964—New York; 1965 (Conrad Hilton Hotel, Chicago, Ill)

DELAWARE VALLEY SECTION

May 19 (Outing—North Hills CC, North Hills, Pa); Sept 15 (Wilmington, Del); Oct 27, Dec 1 (Beck's Restaurant, Philadelphia, Pa)

HUDSON-MOHAWK SECTION

May 12 (Ladies Night); June 23 (Outing—Antlers Club, Amsterdam, NY)

METROPOLITAN SECTION

April 21 (Kohler's Swiss Chalet, Rochelle Park, NJ—"Importance of Bow and Skew"—Lucille Rea, Simplicity Patterns, and John Robertson, Mt Hope Machine Co); May 19—(Kohler's Swiss Chalet, Rochelle Park, NJ—Ladies Night).

MID-WEST SECTION

June 24 (Annual Outing—Cerami's Island View Resort, Burlington, Wis); Nov 18 (Chicago, Ill)

NIAGARA FRONTIER SECTION

May 18 (Buffalo, NY)

NORTHERN NEW ENGLAND SECTION

May 5-6 (New England Regional Meeting, Jug End Barn, S Egremont, Mass); Sept 8 (Annual Outing); Oct 20 (Quartermaster R & E Command, Natick, Mass); Dec 18 (Motel 128, Dedham, Mass); Jan 19 (Woodlawn Country Club, Newton, Mass)

PACIFIC NORTHWEST SECTION

May 26; Aug 5 (annual outing); Nov 10 (business meeting)

PACIFIC SOUTHWEST SECTION

May 19, Sept 30 (outing), Nov 17

PALMETTO SECTION

June 8-10 (joint outing with Piedmont Section at Grove Park Inn, Asheville, NC); Sept 15-16 (Clemson House, Clemson, SC); Jan 20-21 (Poinsett Hotel, Greenville, SC); April 14-15, 1962 (Francis Marion Hotel, Charleston, SC)

PIEDMONT SECTION

April 22 (Jack Tar Hotel, Durham, NC); June 9-10 (Outing, Grove Park Inn, Asheville, NC); Sept 23 (Hotel Charlotte, Charlotte, NC)

RHODE ISLAND SECTION

May 5-6 (New England Regional Meeting, Jug End Barn, South Egremont, Mass); June 23 (Outing); Sept 15 (Management Meeting); Oct 17 (Dinner Meeting); Dec 1 (Annual Business Meeting)

SOUTH CENTRAL SECTION

June 16-17 (Summer Outing—Riverside Hotel); Sept (Hotel Patten—tentative)

SOUTHEASTERN SECTION

June 9-10 (Summer Outing, Radium Springs, Albany, Ga); Sept 9 (Ida Cason Gardens, Pine Mountain, Ga); Dec 2 (Atlanta Athletic Club, Atlanta, Ga)

WESTERN NEW ENGLAND SECTION

May 5-6 (New England Regional Meeting, Jug End Barn, S Egremont, Mass); May 19 (Ladies Night—Rapp's Paradise Inn); June 9 (Annual Outing); Sept 15 (Plant visitation); Oct 27 (Annual Meeting); Dec 1 (Shelton, Conn)

Elected Members

No designation after name indicates Senior
(A) indicates Associate
(J) indicates Junior
(S) indicates Student
*indicates transfer from another class of membership

April 6, 1961

NEW ENGLAND REGION

Northern New England Section

Jesse Jackson (A)

Rhode Island Section

Stephen J Bercen
Edward W Roda (J)
*William A Capuano**
*Richard Ormerod**

CENTRAL ATLANTIC REGION

Metropolitan Section

Theodore D Betsch
Rico P Coladarci
Jacques E Wegmann
J Carey Hutchinson Jr (J)
Kyo Ohta (A)

SOUTHERN REGION

Northern Piedmont Section

Joseph P Gaino
James L Royal
Charles E Umberger
*John Apinis**

Palmetto Section

Robert C Leslie
Arnold R Atkinson (J)
Lionel E Jones (A)

South Central Section

Harvey E DeLay

Southeastern Section

Robert E Bailey
Ruth R Benerito
Herman P Bruckner
Stanley R Hobart
Hubert H James
James J O'Donnell
Hilda M Ziifle
Donald W Urban (A)

WESTERN REGION

Mid-West Section

*Jack B Colquitt**
Daniel J Barufaldi (J)
Martha M Field (S)

Pacific Northwest Section

Robert L Queirolo (A)

Pacific Southwest Section

Thomas F McCarthy

STUDENT CHAPTERS

New Bedford Institute of Technology

Kaushik K Shah (S)

North Carolina State College

Naranbhai M Patel (S)

NOT AFFILIATED WITH A SECTION

Melahat E Basoglu
Adrianus C Bogers
Gross A Janutolo
*Manuel C Lourdes**

new!

A Development of Althouse Research

NYLANTHRENE®

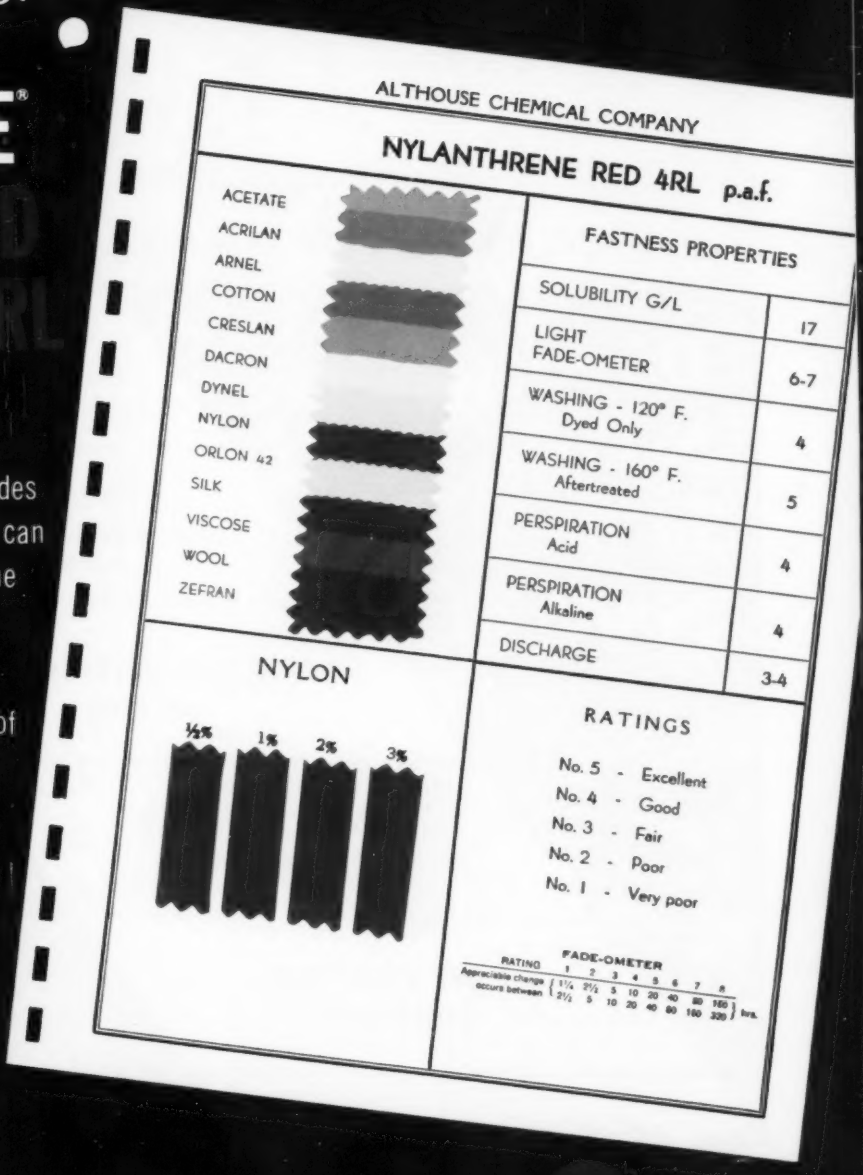
RED 4RL

contributes more to profits

The new bright, crisp colorfast shades possible with Nylanthrene Red 4RL can help produce greater dyeing volume through the better salability of fresh styling.

The excellent covering properties of Nylanthrene Red 4RL save many dollars in dyeing time and reworking costs.

To have your dyeing operations contribute more to profits, call Althouse Customer Service today.



ALTHOUSE Chemical Company

Reading, Penna.

a division of Crompton and Knowles Corporation

specialists in colorfast dyes

E.J. FEELEY COMPANY

E. J. Feeley Co.

DYESTUFFS · MANUFACTURERS OF TEXTILE CHEMICALS

263 SUMMER ST., BOSTON, MASS. · 1700 WALNUT ST., PHILADELPHIA, PA. · 650 STATE ST., CHARLOTTE, N. C.

Direct Selling Agents in the South of

BASES

STABLE SALTS
(STORED IN TEMPERATURE CONTROLLED VAULTS TO INSURE FRESHNESS)

PHARMANTHRENES
(VAT DYES)

PYRAZOLINES
(FAST DIRECT DYES)

DIPYRAZOS
(DEVELOPED DYES)

COLORS FOR WOOL

PHARMA

Manufactured by
PHARMA CHEMICAL CORPORATION
Plants:
BAYONNE • NEW JERSEY

ADR ABSTRACTS

The Quantitative Analysis of Binary Fiber Mixtures Containing Courtelle (Acrylic Fiber)

Armfield, W, *J Textile Inst 51*, P699-705, Dec, 1960

The composition of Courtelle blends containing wool or silk can be determined by dissolving the protein fiber in sodium hypochlorite solution, as described in B S 2882, and nylon-Courtelle blends can be analyzed by dissolving the nylon in formic acid, as described in B S 3069. Fibro-Courtelle blends can be determined by dissolving the Fibro in sodium zincate solution, as described in B S 3068.

It is desirable, however, to be able to dissolve either component of a mixture, and, since Courtelle is soluble in dimethylformamide (DMF), it is possible to develop an analytical method by using this substance to remove the acrylic fiber.

Undyed Courtelle, or Courtelle dyed with other than premetallized dyes, can be dissolved satisfactorily in DMF at 60°C, but when dyed with some premetallized dyes it requires a temperature of 90°C. Two methods of analysis were therefore developed.

The fabric to be analyzed should first be extracted with petroleum ether to remove nonfibrous materials (eg, lubricants).

When premetallized dyes are absent, a weighed sample of the extracted material is treated with DMF for 10 minutes at 60°C and the solution is decanted through a tared sintered glass filter-crucible. This process is repeated twice more with additional DMF. The fibers are then transferred to the crucible and washed thoroughly with distilled water. Finally, the crucible and fibers are dried for several hours and weighed.

When premetallized dyes are present, the process is essentially the same except that the sample is heated in the DMF for one hour at 90°C.

The percentage of Courtelle in the fabric is calculated from the difference in weight before and after the DMF treatment. When Terylene is the other component of the mixture, the weight of the residual fibers should be multiplied by 1.02.

It is pointed out that certain other fibers in the mixture (Fibro, cotton, wool and silk) retain significant quantities of DMF unless the residual fibers are given a thorough washing before drying and weighing.

The above analytical method is said to be also applicable to most other types of acrylic fibers.

●

Dyeing of Polyester Fiber in the Worsted Apparel Trade

Hulme, W, *Dyer 124*, 729, Nov 4, 1960.

The bulk of the polyester fiber used in the worsted industry, according to the author, is dyed as 100 percent polyester, in the form of either staple fiber or tops, at high temperatures. It is not considered necessary to prescour; wetting out thoroughly at 140°F should be sufficient preparation, it is said.

The dyestuff must be well dispersed before adding to the machine; otherwise it will filter out on the top as a sticky mass, difficult to remove. The dyes level best at a pH of 4-5, adjusted with acetic acid.

A considerable quantity of polyester and worsted blends are dyed in yarn form usually in packages, but not usually in heavy shades. Only the most level-dyeing dyestuffs should be selected for each fiber, as a perfectly level dyeing is essential, especially if the yarn is to go into solid warp or filling or large-patterned fabrics. Owing to the inability of wool to withstand high temperatures for prolonged periods, it is recommended that a maximum temperature of 230°F for 45 minutes should be the practical limit. An addition of 3 gpl of formaldehyde is suggested to help to minimize wool damage.

Piece dyeing of polyester fiber/worsted blends is generally performed at atmospheric pressure as close to 212°F as possible, with the aid of a carrier. As with all types of piece dyeing, a well-prepared cloth is essential, as free from soaps and oils as possible. Some degree of setting, either by crabbing or by semi-decating, is a distinct help in eliminating the danger of rope marks.

Depending on the depth of shade, either a one-bath or a two-bath dyeing method is used. In the one-bath method, the carefully selected dyes for wool and polyester are added separately to the dyebath previously charged with carrier and levelling agents, and adjusted to a pH between 5 and 6. The bath is brought to the boil in 45 minutes, and dyeing is continued at the boil for at least two hours.

The fabric is finally given a boiling detergent scour, to remove disperse dyes from the wool.

In the two-bath method, the polyester fiber is dyed first, and the wool is brought to shade in a second bath.

●

Printing of Fabrics of Dacron Polyester Fiber

Anon, *Dyes & Chem Tech Bull (Du Pont) 16*, 91-100, August, 1960.

Various types of Dacron are now being used in the blouse, shirting and dress-goods fields. Fabrics made of types 54 and 56 Dacron can be printed with disperse dyes, while fabrics of types 64 and 62 can be be printed with either disperse or cationic dyes. Blends of types 54 or 56 with 62 or 64 are normally printed with disperse dyes to obtain complete coverage on both kinds of Dacron.

Types 54 and 56 Dacron can be printed in a full range of shades by using selected dyes of the Acetamine, Celanthrene and Latyl groups. Nonsubliming dyes should be used wherever possible.

The prints may be fixed by cottage-steaming for one hour (at 10-15 psi for Latyl dyes, 2-5 psi for Acetamines and Celanthrenes); by heat-treatment (300-350°F); or by the Thermosol process (390-415°F). The printing paste contains, besides the disperse dye, urea and a suitable thickener. If the prints are to be heat-treated, a carrier is also added.

The prints are later rinsed and soaped for five minutes at 120-140°F with a suitable surface-active agent.

Types 62 and 64 Dacron can be printed for bright shades with cationic dyes, and for duller shades with disperse dyes. Cationic dyes lack the lightfastness of the disperse dyes but have excellent wetfastness. Selected Dekatyl, Sevron and regular basic dyes are used.

A typical printing paste contains, besides the cationic dye, glacial acetic acid, citric acid, and a suitable thickening. Alternatively, thiodiglycol and urea may be used instead of the acetic and citric acids. Increased print strength can be obtained by adding a carrier.

The prints can be steamed for one hour at 2-5 psi in a cottage steamer. Light to medium prints, however, may be aged for 15-30 minutes in a continuous festoon-type ager. The remaining processes are the same as for types 54 and 56 Dacron.

(*continued on page 82*)

PRINTING PASTE FOR POLYACRYLIC TEXTILES———
Containing Cupric Salts and Phenols (D,2/07)

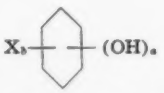
U S Pat 2,906,590 (Deering Milliken Research Corp—Evans—Sept 29, 1959)

Difficulties encountered in the printing of synthetic textiles with conventional printing pastes quite generally arise because of the well-known poor affinity of dyes for synthetic fibers.

This invention reportedly solves the problem of printing polyacrylic material, such as Orlon or Acrilan, by incorporating in the paste an acid dye, a water-soluble cupric salt and a phenolic compound.

Any dyestuff referred to as an "acid dye", including the more recently developed brands which dye in neutral media, can be employed. Suitable dyestuffs are enumerated in col 2, lines 40-50.

Phenolic compounds correspond to the general formula



wherein "X" stands for H, any hydrocarbon radical (including aromatic groups), carboxy groups or halogen; "a" = 1-3; "b" = 1-2 and "a" + "b" are not more than 3. A great number of compounds is said to work satisfactorily while p-phenylphenol is preferred.

Suitable water-soluble cupric salts are $CuSO_4$ (preferred when dyes are generally applied with sulfuric acid) and cupric acetate (for brands applied with acetic acid); cupric nitrate or chloride may also be employed. In the printing of acrylic-wool blends, the preferential absorption of dyes by the wool portion may be overcome by adding an alkali metal alkyl sulfate (Tergitol Anionic 4) and some furfuryl alcohol (see col 3, line 44—col 4, line 14 and example #II).

The printing paste has to be "activated", ie, preheated before printing to 200-300° (pref 215-260°)F. Apparently the dyestuff forms, in this procedure, a complex with the cupric ions under the influence of phenols. Thus this "activation" process has been found to be essential for good results.

Example: A combination of Roracyl Dark Green B, Anthraquinone Blue SWFC Conc (CI Acid Blue 25, CI 60255) and Du Pont Orange RO (CI Acid Orange 8, CI 15575) was mixed in a vessel with finely powdered p-phenylphenol, glycerine, and a gum trag thickener. An aqueous solution of copper sulfate was added and the mixture boiled under pressure of 15 psi for 45 minutes. An Orlon fabric was hand-printed with the thus-activated paste, dried and steamed for three minutes under pressure, scoured and dried. A deep black print of excellent light- and washfastness reportedly resulted.

Among the references cited by the Patent Office:

U S Pat 2,653,074 (Du Pont/1953) refers to the dyeing of polyacrylic fibers with acid or direct dyes according to the cuprous-ion method. [Cf *Am Dyestuff Reptr* 43, 383 (1954)].

U S Pat 2,743,991 (Union Carbide/1956) describes the dyeing of polyacrylic fibers according to the cuprous-ion method under strictly controlled conditions. [Cf *Am Dyestuff Reptr* 45, 981 (1956)].

U S Pat 2,796,318 (Deering Milliken Res Corp/1957): acrylic fibers may be dyed with acid or direct dyes in the presence of a cupric salt and phenyl-phenol, both in an amount of 200% o w dyestuff, maintaining the copper substantially in the cupric valence. [Cf *Am Dyestuff Reptr* 47, 318 (1957)].

Am Dyestuff Reptr 40, 750 (1951) [abst from *Textile Research J* 21, 531 (1951) by Feild et al] refers to the dyeing of acrylic fibers according to the cuprous-ion method; further studies revealed that copper enhances the pick-up of a wide variety of dyes when present in the dyebath in metallic form or as dissolved cupric or cuprous salt.

•

BLEACHING OF POLYAMIDE FIBERS WITH PEROXIDE———
Amino Products Protect against Tensile Strength Losses (B,2)

U S Pat 2,909,404 (Deutsche Gold & Silber Sch Anst—Dithmar, Naujoks —Oct 20, 1959)

Losses of tensile strength running as high as 40-80% have been observed in the bleaching of nylon or Perlon with peroxides.

It is claimed in this patent that such losses can be avoided by adding small amounts of a protective agent which contains at least two N atoms in the form of a primary or secondary amino group; optionally, a tertiary amino group or a sulfonamido group may replace one of the amino groups. Examples of appropriate products are ethylene diamine, piperazine, p-amino-benzene sulfonamide and many others (col 1, line 55—col 2, line 20).

Compounds of this type reportedly are more active than previously suggested protective agents. In bleaching baths of active oxygen content of 0.3 mol/lit, concentrations of the agent between 0.01 and 0.05 moles/lit were found to give good protection. In usual peroxide-containing washing baths of about 0.25 mol active O-content per liter, as little as 0.001-0.005 moles/lit proved to be satisfactory (cf examples #6 and 7). In cases where losses of 40-80% of tensile strength could be expected, this loss reportedly could be reduced to about 2-8% (col 2, lines 35-45).

Example: A yarn of 60-denier Perlon L-filaments was treated for two hours at 60°C in a solution containing 4.8 g active oxygen (in form of a H_2O_2 solution), 0.1 g magnesium sulfate crystals, 1.0 ml commercial water glass (38° Bé) and 1.72 g piperazine per liter. The pH was 9.5. The original strength was found to be reduced after bleaching in an amount of only 8%, while the loss had been determined at 38% under otherwise equal conditions when the protective agent was omitted.

Among the references cited by the Patent Office:

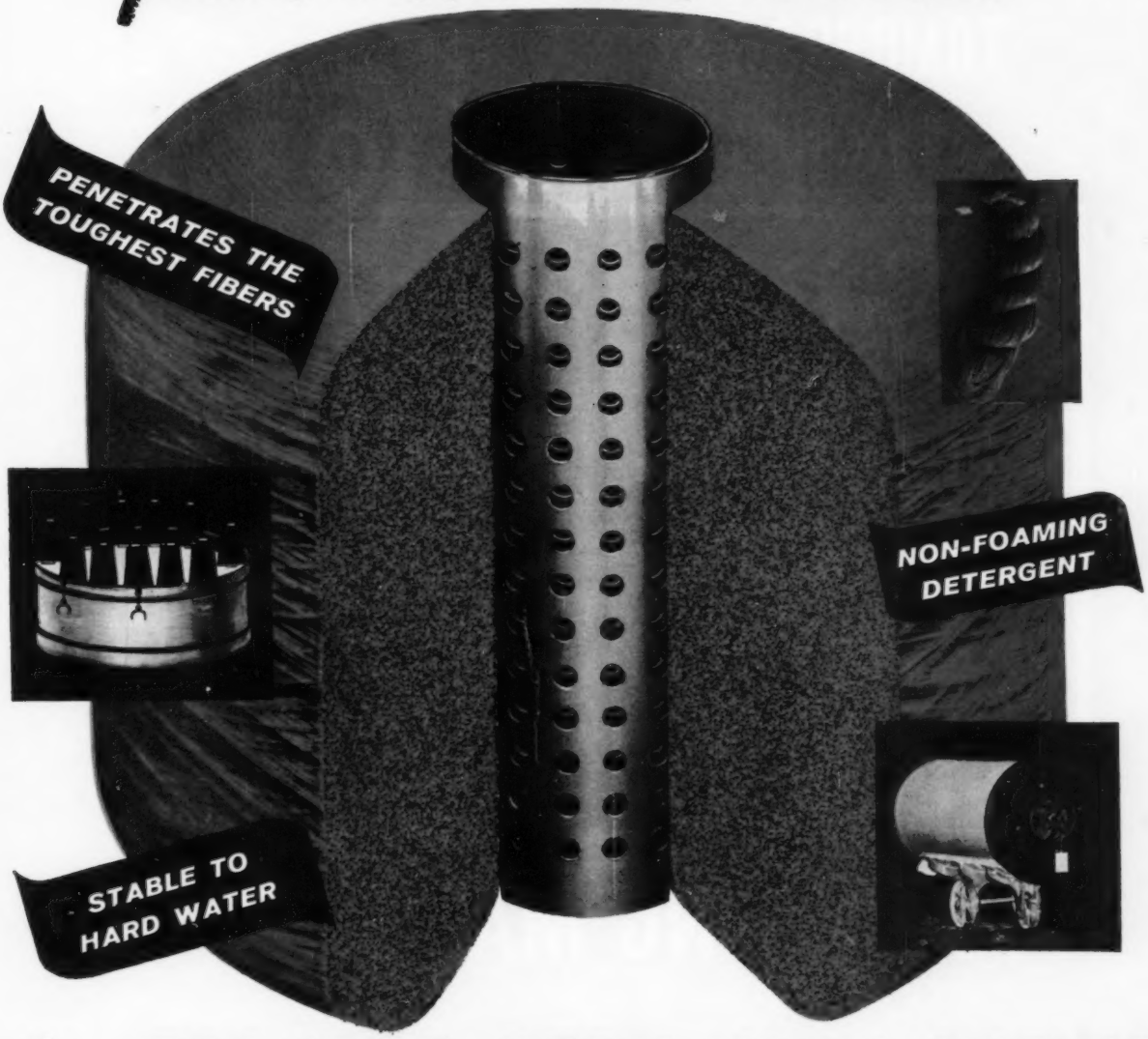
U S Pat 2,730,428 ("Tepha" Ges/1956): fibers which are susceptible to attack by alkaline oxidative bleaching liquids are protected by compounds containing an SO_2 group directly connected with an N atom, such as sulfonamides of amino carboxylic acids.

U S Pat 2,688,617 (Am Cyanamid/1954): special brightening agents of the sulfonated dihalogeno diamino stilbene group were found to be compatible with bleaching solutions.

Am Dyestuff Reptr 38, 747 (1949) shows in Table I the effect of various bleaching agents on the tenacity of nylon yarns.

CHEMSOL N-52

penetrant and leveler



for PACKAGE·BEAM·YARN DYEING

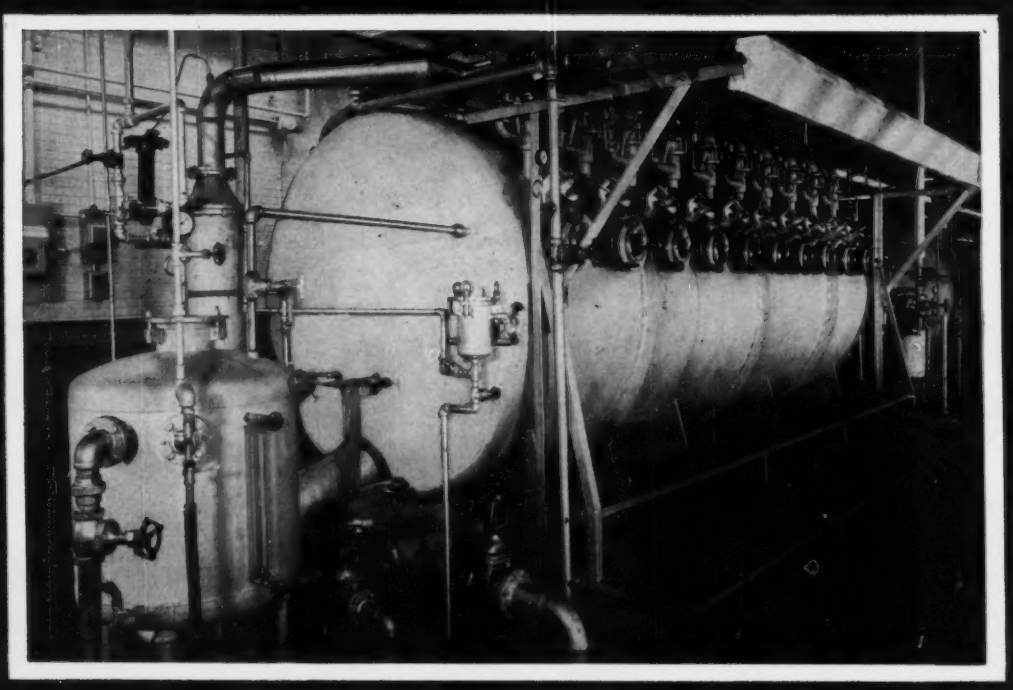
for cotton·nylon·orlon·acetate

CHEMICAL PRODUCTS CORPORATION

Manufacturing Chemists

WEST PATERSON • NEW JERSEY • DELAWARE • NORTH CAROLINA

NEW AS TOMORROW'S HEADLINES



JET DYEING MACHINES

PATENTS PENDING

A PRODUCT OF BURLINGTON INDUSTRIES' RESEARCH

FOR WOVEN AND KNIT FABRICS

SEE IT AT BOOTH 647 A.A.T.E. ATLANTIC CITY, N. J.

40th ANNIVERSARY

Gaston County Dyeing Machine Co.

WORLD'S LARGEST PRODUCERS OF PRESSURE DYEING & DRYING MACHINERY

STANLEY, N. C., U.S.A.

REPRESENTATIVES

G. Lindner
Terminal Bldg., 68 Hudson Street
Hoboken, N. J.

Albert P. March
Flourtown, Pa.
Philadelphia ADams 3-2901

J. R. Angel
1104 Mortgage Guarantee Bldg.
Atlanta 3, Ga.

A. R. Breen
80 E. Jackson Blvd.
Chicago, Ill.

The Rudel Machinery Co., Ltd.
614 St. James Street, W., Montreal
260 Fleet St., E., Toronto

ADR News Report:

General News of the Industry
Personalities in the News
New Products, Developments, Processes

Moretex Purchase Announced

Purchase of Moretex Chemical Products, Inc, Spartanburg, SC, from the Moreland Chemical Company by Wallace R Irwin, Ira S Hurd, and an associated group has been announced.

Mr Irwin, who has been associated with Moretex since 1953, has been elected president. Mr Hurd, executive vice president of the firm, formerly was general sales manager of Warwick Chemical Co and Rohm & Haas Co and has most recently been sales manager of Moretex.

Moretex Chemical Products is a manufacturer of chemicals for the textile and allied industries, having been organized in 1908, and has operated under the present name since 1955. Moretex chemical products include Moropol polyethylene emulsions, Morepel water repellents, Moropon detergents, and Moretex sizing compounds. Moretex is exclusive textile licensee for W R Grace Chemical Co's cationic hydrazine softeners, marketed under the trade name of Aquazine. The firm also markets polyvinyl acetate and polyvinyl alcohols through agreements with Air Reduction Chemical and Carbide Company and Aktavins under agreement with the Heyden-Newport Chemical Co.

Sales representatives for Moretex Chemical Products will continue to be K T Moore, Oliver Goldstein and Richard Fowler.

Mr Hurd also announced that Williams and Swanson Advertising, Inc of Spartanburg has been appointed to handle Moretex advertising and public relations.

•

TRI Seminars

Two Textile Research Institute seminars will be conducted by representatives of major fiber-producing firms during May.

On Thursday, May 4, R C Wincklhofer of the Central Research Laboratory, Allied Chemical Corp will conduct a seminar entitled "Polymer Characterization by Differential Thermal Analysis". The discussion will concern the use of this interesting technique in the determination of fusion temperatures, crystallinities, and modes of decomposition of several fiber-forming high polymers.

The last TRI seminar of this series will be presented by W H Foster of American Cyanamid Co on Thursday, May 18. Mr Foster will discuss "Recent Develpoments in the Theory of Dyeing" and will consider both equilibria and kinetics involved in the application of dyes to fibers.

Both seminars, which are open to the public, will begin at 2:30 pm in the Edward T Pickard Seminar Room at Textile Research Institute in Princeton, NJ.

•

National Aniline Recruiting Engineers for Nylon Expansion

Recruiting of textile, chemical, electrical and mechanical engineers to fill positions resulting from a major nylon expansion program is under way by Allied Chemical's National Aniline Division.

The job openings are at Columbia, SC, where a new fine-denier nylon 6 plant is under construction, and at Hopewell and Chesterfield, Va.

The multimillion-dollar plant at Columbia is expected to be operative in late 1961 and will be the first of its kind in this country to produce nylon 6 yarn for the textile industry.

The erection of the South Carolina plant has necessitated an expansion of Allied's caprolactam monomer facilities at Hopewell, where the starting material for Caprolan nylon is produced. Additional personnel will be required at Chesterfield, where heavy nylon for tires and carpets is manufactured.

Experts in physics, instrumentation, statistics, quality control, chemical processing and polymerization are needed for positions in research and development, operations and maintenance.

For further information, write PR Dept 46, Allied Chemical's National Aniline Division, 40 Rector St, New York 6, NY.

Program for Fiber Society's Spring Meeting Set

Speakers and the general program for the spring meeting of the Fiber Society, to be held April 27-28 at the University of Georgia, Athens, Ga, have been announced.

Stanley Backer, Textile Division, Massachusetts Institute of Technology, and president of the Society, announced that William Tate, dean of men, University of Georgia, will address the annual banquet on the subject of "What Faces Your Grandsons in 1975".

Emery I Valko, Lowell Technological Institute, chairman of the Society's technical committee, has listed the following program chairmen, subjects and speakers:

Thursday Morning—Bruno R Richards, Chemstrand Research Center, Durham, NC, chairman. "Mechanical Principles of Natural Crimp of Fibers" by R H Brand, Orlon Technical Div, Benger Lab, E I duPont de Nemours & Co, Inc, Waynesboro, Va, and Dr Backer. "The Effects of Wool Cortical Cell Structure on Dyeing" by H E Millson and C Maresh, American Cyanamid Co, Bound Brook, NJ.

Thursday Afternoon—Dr Valko, chairman. "Shade Change of Vat Dyeings on Soaping in Relation to Dyeing Process and Substrate" by J Wegmann, Toms River Chemical Co, Toms River, NJ. "Physical Properties and the Dyeing of Polypropylene Fibers" by Max Levine, Fiber Development Dept, Hercules Powder Co, Cleveland, O.

Friday Morning—Paul B Stam, J P Stevens & Co, Inc, Greensboro, NC, chairman. "Treating Wool Fabrics by Interfacial Polymerization" by Harold P Lundgren, Western Regional Research Laboratory, USDA, Albany, Calif. "Studies of the Formation of Warp Streaks of Fabrics by Loom Reeds" by John E Pretka, Textile Research Laboratory, E I du Pont de Nemours & Co, Inc, Wilmington, Del.

Friday Afternoon—A H Nissan, Rensselaer Polytechnic Institute, Troy, NY, chairman. "Boundary Friction of Textile Fibers" by Tomlinson Fort Jr and J S Olsen, Fiber Surface Research Section, E I duPont de Nemours & Co, Inc, Kinston, NC. "The Effect of Finish Composition and the Surface Geometry on the Friction of Filament Yarn" by Harry J Demas, National Aniline Div, Allied Chemical Corp, Hopewell, Va, and Carl Schlatter, Wilmington, Del.

General program for the ladies during the two-day Fiber Society meetings, includes: tour of the Center for Continuing Education of the University of Georgia; lunch and tour of Laureledge and Beech Haven; tour of Athens, and the Georgia Museum of Art.

The Fiber Society Governing Council meets Wednesday prior to the general meetings which get underway Thursday morning with registration and an address of welcome by Hugh B Masters, director of the Center for Continuing Education, host of the meeting.

•

Scholler Foundation OKed

A Pennsylvania charitable trust fund known as The Scholler Foundation, set up by the late Frederick C Scholler, founder of Scholler Brothers, Inc, Philadelphiaa, has been declared legal and valid by unanimous decision of the Pennsylvania Supreme Court. The decision upheld the decree of the Orphan's Court of Philadelphia County from which decision an appeal had been taken. Mr Scholler, who died in 1957, was a resident of Ventnor, NJ.

The Foundation was named by its founder as the recipient of the income from the companies of the decedent: Scholler Brothers, Inc, Scholler Brothers, Ltd, and Trisco Products, Inc.

•

Sagamore Color & Chemical to Sell ROSCC Products in NE

Richmond Oil, Soap & Chemical Co, Inc, Philadelphia, Pa, has announced the appointment of Sagamore Color & Chemical Co, 82 Braintree St, Allston Station, Boston 34, Mass as its sales and service organization in New England.

Sagamore Color & Chemical Co, headed by Hans G Walz, will sell and service the various textile chemical specialties manufactured by Richmond Oil, Soap and Chemical Co, Inc.

Burkart-Schier to Distribute Nourylande Alginates in Southeast

Announcement has been made of agreement between the Edward Mendell Co Inc, Yonkers, NY, and Burkart-Schier Chemical Co, Chattanooga, Tenn, for the sale and distribution by the latter company of a complete series of alginate products for use in the textile industry.

Burkart-Schier manufactures and distributes a full range of industrial and textile chemicals and auxiliaries, as well as latex compounds.

Edward Mendell Co Inc is the exclusive representative in the United States for Societe Nourylande of France. Nourylande, founded in 1838, has been producing alginate materials since 1931, developing during this time many different types and grades of these alginates for textile printing, dyeing, sizing and finishing.

The area covered by the agreement includes Virgina, North and South Carolina, Tennessee, Georgia, Alabama, Mississippi and Louisiana.

●

New Pricing System for ACC Nitrogen Div Urea

Nitrogen Division, Allied Chemical Corp, has announced a new pricing system for its urea products.

Industrial grades, which enter manufacture of many products, such as textiles, resins, etc, are now priced as follows:

Bagged: Full truckload or carload—$100.00 fob plant, or, at seller's option—107.50, freight allowed, or, at seller's option, delivered cost equalized with competitive producing points.

Bulk: Full truckload or carload—$96.00 fob plant, or, at seller's option—103.50, freight allowed, or, at seller's option delivered cost equalized with competitive producing points.

All prices fob LaPlatt, Neb and South Point, O.

All prices fob Nitrogen Division warehouses $2.00 higher.

●

150 Attend 30th Annual Meeting, ISCC

About 150 leaders in varied aspects of color technology attended the 30th annual meeting of the Inter-Society Color Council, April 10, 11, and 12 in Rochester, NY.

On April 10, the conference subcommittee meetings considered such problems as color naming, color in the building industry, and standards for visual examination of small color differences.

George Eastman House and its historical color exhibit were open in the evening for those attending the meeting.

The second day, April 11, the conference heard reports from color problem committees.

In the afternoon a symposium on color in photography and television was held, with George T Eaton, Kodak Research Laboratories, serving as program chairman.

The symposium offered four talks by speakers from Eastman Kodak Company: " How Color Photography Works," by Richard O Edgerton; "A Note on an Early Color Photograph," by Ralph M Evans; a motion picture—"The Blue Angels," introduced by John Stott; and "No Change for the Picture," by William A Reedy.

On April 12 visiting experts discussed color in television in three lectures: "Principles of Color Television," by W T Wintringham, Bell Telephone Laboratories; "Color Television Recording on Magnetic Tape," by John W Wentworth, Radio Corp of America; and "Differences In Stage Preparation Between Black-and-White and Color TV Live Shows," by R Reid Davis, National Broadcasting Co.

A banquet for delegates was followed by a special demonstration of color perception by C S McCamy of the National Bureau of Standards.

NEW PRODUCTS AND DEVELOPMENTS

Olin Mathieson Announces New Continuous Bleaching Process

A new continuous bleaching process that is said to cut manufacturing costs up to 40 percent on natural and synthetic fibers has been announced by Olin Mathieson Chemicals Division. The new process utilizes Textone, one of Olin's sodium chlorite products.

Until now, Textone has been used principally in batch operations. Development of the new process, which requires little modification of conventional equipment, reportedly extends its use to the continuous bleaching of cotton; synthetic fabrics such as rayon, nylon, Acrilan and Dacron; and blends of natural and synthetic fibers.

Savings in the sodium chlorite method over continuous peroxide bleaching are realized in material costs, it is claimed.

The process is the result of two years of development work. Olin is the only company in the United States manufacturing sodium chlorite on a commercial scale.

The corporation has published an eight-page technical bulletin describing the new process. It includes information on construction materials, and Textone storage, properties, handling precautions and application. There are supporting graphs and tables.

Copies may be obtained by writing to Olin Mathieson Chemicals Division, Sales Department, Baltimore 3, Md.

●

Softener 1 Applicability Broadened

Expanded applicability of Softener 1, a finishing agent, to treat synthetic knitted and woven fabrics as well as tricot has been announced by the W F Fancourt Co.

Nonionic in nature, Softener 1 reportedly offers outstanding slickness, appropriate softness and gentle body found desirable in finishing these fabrics. It can be applied to both bleached and dyed synthetic goods.

Designed for use either alone or in combination with other finishes, the softening agent is said to give highly satisfying resistance to yellowing and gas fading.

Additional information can be obtained by contacting the Fancourt Company, 516 S Delaware Ave, Philadelphia 47, Pa.

Benzyl Fast Yellow RLE

Benzyl Fast Yellow RLE, a neutral-dyeing acid dye that can be applied from an acetic acid, ammonium acetate, or neutral bath, has been introduced by Ciba Co, Inc.

This dye, an original Ciba product, reportedly dyes wool, silk, and polyamide fibers to a bright, slightly reddish yellow. Materials to which it is applied can be discharged to white, the company's technical bulletin states.

The bulletin also reports that Benzyl Fast Yellow RLE has excellent leveling properties and especially recommends combining it with Benzyl Fast Red 2BL and Alizarine Fast Blue BE. This combination, dyed with Univadine W in the dyebath, will produce "exceptionally good build-up of shade and leveling, in dyeing fashion shades on wool piece goods," the bulletin states.

Results of Ciba testing showed the new dye to possess "very good fastness to light and good all-round wetfastness." It also is suited for use as a "brightening" color for shading Cibalan dyes, the bulletin reports.

A good print color for wool, silk and nylon, Benzyl Fast Yellow RLE is recommended by Ciba for dyeing loose wool when only a light milling is required, knitting and carpet yarn, and piece goods.

●

Improved Keltex S

A new high-viscosity Keltex S, which reportedly provides the same thickening as Keltex S now being used, but at from 10% to 15% lower concentrations, is now available from the Kelco Co, Clark, NJ.

Kelco sells the improved Keltex S at the same price as the current product. Shipments of the improved product in place of the current Keltex S began in late February. For identification, the drums in which the improved product is shipped bear a prominent strip showing the word "improved" directly over the Keltex S label.

All Keltex S customers have been advised that where, for example, 16 lbs of regular Keltex S are being used to prepare a 50-gallon barrel of print paste thickener, the new improved Keltex S should be used at a level of 14 lbs per barrel. In all other respects, the improved Keltex S functions exactly as the present product.

Textile processing products proved from starch to finish

While we don't sell starch, there's a work-saving, efficiency-boosting Rohm & Haas product for virtually every step in textile processing and finishing . . . and in many cases, a number of these superior products work together to upgrade quality and save money.

Some examples: ACRYSOL water soluble warp sizes and thickeners; RHOZYME enzyme desizing materials, for speedy removal of starch and proteinaceous sizes; TRITON surfactants and detergents with great emulsifying and wetting power, for fast wetting, thorough detergency and a clean rinse in many different wet processing applications.

Dyeing is more efficient, more uniform with TAMOL dispersing agents, LYKOPON reducing agents, and TRITON dyeing assistants. Prints are sharp, on shade, and uniform with FORMOPON printing hydro and RHOPLEX pigment binding resins.

Where stripping is necessary, PROTOLIN stripping agents offer powerful color removal over a range of pH. RHOPLEX acrylic emulsions are widely used as backing for upholstery fabrics and binder for nonwoven fabrics. RHONITE thermosetting resins impart the popular "wash-wear" finishes.

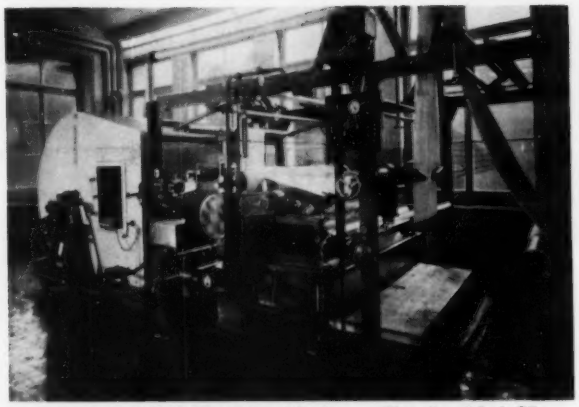
Along with this complete line of textile chemicals, Rohm & Haas offers complete technical service by a staff of experienced technicians second to none in textile knowhow.

Write for a free copy of the latest booklet listing Rohm & Haas textile chemicals and their uses.

ACRYSOL • FORMOPON • LYKOPON • PROTOLIN • RHOPLEX • RHOZYME • RHONITE • TAMOL and TRITON *are trademarks Reg. U.S. Pat. Off. and in principal foreign countries.*

ROHM & HAAS

PHILADELPHIA 5, PA.



Svetema Pad-Roll Bleaching Machine—Chamber Mod GP

Fiber Glass Polyester Lining of Svetema Bleaching Unit Offers Safety from Corrosion

The progress of textile bleaching with sodium chlorite has been slowed since the development of chlorine dioxide in the process is difficult to control. However, The Svetema open-width Pad-Roll bleaching system, which is in use for peroxide and sodium-chlorite bleaching alike, now reportedly offers a dual solution to the problems involved. Although the Activator PNR in this patented system is said to prevent the development of free chlorine dioxide when properly applied, an additional safeguard is provided for by lining the reaction chambers with an effective fiber glass polyester compound.

The machine, as shown in the illustration, consists of the following components:

1) *Entering rigging* with curved run-up table, adjustable tension device with guide-rolls and mechanical guiders.
2) Stainless-steel *impregnation box* with five sets of dip-rolls. Between the positively driven top-rolls are floating squeeze rollers which are said to effect thorough penetration.
3) *Feed control arrangement*, driven from the squeeze mangle, which adjusts automatically the liquor supply according to cloth speed and absorption to predetermined settings.
4) The *squeeze mangle* allows additional pick-up. Excess liquor is fed back to the front of the impregnation box, giving a continuous circulation.
5) Synchronization of impregnating and batching speed is effected by a *pendulum compensator*, which also keeps tension constant at predetermined settings.
6) The stainless-steel *reaction chambers* are lined for bleaching with sodium chlorite with a 2-mm layer of the special glass fiber polyester compound and insulated to prevent inside condensation. The outside is covered with aluminum sheets.
7) A complete set of *controls* reportedly assures maintenance of the desired moisture and temperature conditions and all components have a synchronized variable speed drive.

The Svetema bleaching system, it is claimed, offers the following main advantages:

Odorless feed solutions which cannot cause corrosion and will remain stable even at elevated temperatures for a long time.

Elimination of wetting agents, due to penetration in the special impregnation box.

Excellent exchange of water against chlorite solution, when impregnating wet-in-wet and automatically controlled feeding of bleach liquor, self-adjusting according to cloth speed and absorption.

Full exhaustion of the soduim chlorite by Activator PNR, which stabilizes the bleach bath and controls self activation, so that the amount of chlorite applied is kept to a minimum.

No chlorine-dioxide discharge from goods leaving the reaction chambers due to full exhaustion of the chlorite.

Economy of chemicals, water, steam and manpower.

The Svetema open-width bleaching range can be combined with the Svetema counter current washer for pre- and afterwashing. Several of these washers are in operation in this country in connection with Pad-Roll units.

Svetema Pad-Roll Machines are distributed in this country by Ernest L Frankl Associates, Inc, 515 Madison Ave, New York 22, NY.

•

Verona Adds to Product Line

Verona Dyestuffs, Springfield Rd, Union, NJ, has announced the addition of several new products to its line, as follows:

"*Benzocuprol Dyes*, which represent a new range of copper-aftertreated direct dyestuffs. The lightfastness of the Benzocuprols reaches the same high standard as that of the fast-to-light direct colors. In wetfastness properties, they are comparable to D & D and sulfur dyes. Of particular interest for the printer are the well-dischargeable types in this new range. Most of the Benzocuprol dyes have the advantage of minimum shade change upon copper-sulfate aftertreatment.

Resolin Blue GRL represents a disperse dyestuff highly recommended for the dyeing of polyester fibers. This type is particularly advantageous for the dyeing of economical heavy shades such as navy blue, black, dark brown. Because of its excellent dispersibility, Resolin Blue GRL is especially suitable for package dyeing. It possesses excellent fastness to sublimation in light and heavy shades, good fastness to light and wet processing. Resolin Blue GRL is also suitable for high-temperature dyeing.

"*Isolan Brown RLS, Isolan Brown BLS, Isolan Dark Brown RL* are three new neutral-dyeing premetallized dyestuffs. They are outstanding due to their very good lightfastness, excellent general fastness properties and good level dyeing properties, short dyeing time. No change of shade to red under incandescent light. All three types are of very good solubility. They can be used alone and in combination with other Isolans on wool, nylon, and silk. Isolan Dark Brown RL is particularly interesting because of its excellent yield and money value. It is available in two concentrations.

"*Phorwite BA* represents a new optical brightening agent with high affinity for cellulosic fibers, excellent solubility, good wetfastness properties, neutral to bluish fluorescence. The affinity is practically not influenced by temperature and salt content of the dye liquor. Optimum brightening effects are achieved at pH ranges from 7 to 11. Because of its high affinity, even at temperatures near the boil, the use of Phorwite BA is very advantageous in combination with peroxide bleaching on becks and package machines. The extremely high solubility of approximately 40% in cold water makes Phorwite BA particularly valuable for the printing of white discharges. This product is available in powder and solution form.

"*Phorwite REU* is mainly recommended for the combined application with a resin finish (one-bath process). The excellent compatibility with zinc salts as catalysts such as zinc chloride and zinc nitrate makes this product outstanding. In addition, Phorwite REU can be applied on polyamid fibers and blends of cellulosic and synthetic fibers according to the exhaust method."

•

"Nonmigrating" Vat Dyes

A full line of "nonmigrating vat dyes which give clearer and brighter shades on cotton and rayon, where top fastness is desired," is now offered by Allied Chemical's National Aniline Division.

National's nonmigrating Carbanthrene dyes reportedly overcome a problem usually associated with conventional vat-dye particles, which are said to generally migrate upon drying after pigmentation on cotton and rayon cloth. This results in shading and a streaky appearance. The migration is sometimes due to uneven drying when the dye particles are drawn to moisture in the slower drying part of the fabric. After several years' research, National Aniline claims to have eliminated these undesirable characteristics by improving its existing vat dyes to minimize migration while the cloth dries.

The Carbanthrene nonmigrating vat dyes are available in a comprehensive range of shades.

For more information, write PR Dept 40, Allied Chemical Corp, 40 Rector St, New York 6, NY.

for MAN-MADE FIBERS...

an unexcelled selection of dyestuffs for dyeing and printing

ASTRAZONS a very elaborate range of modified basics for Acrylic fibers comprising most shades, price ranges, and fastness properties.

RESOLINS dispersed dyestuffs especially standardized for Polyester fibers with new and interesting products just released.

®ISOLANS neutral dyeing pre-metallized dyestuffs for Polyamide and Acrylic fibers, including outstanding yellows and greys.

®TELONS acid dyestuffs standardized for Polyamide fibers, especially selected from our large assortment of products.

VERONA PHARMA
TRADEMARKS REGISTERED

VERONA DYESTUFFS

A DIVISION OF VERONA-PHARMA CHEMICAL CORPORATION
Manufacturers of Intermediates, Dyestuffs, Organic and Aromatic Chemicals
SPRINGFIELD ROAD, UNION, NEW JERSEY
Branches: Haverford, Pennsylvania · Providence, Rhode Island · Rock Hill, South Carolina

plus the well-known specialty Dyestuffs and Auxiliaries of
BAYER LEVERKUSEN · CASSELLA MAINKUR

PERSONALITIES IN THE NEWS

Sayer

Bauer

Brewer

Shailer

Macfarlan

King

Bertram Sayer has been appointed to the newly created position of manager, technical sales service, and *Harold J Thoma* has joined the sales department of Polyvinyl Chemicals, Inc, as technical sales representative.

Mr Sayer, who joined Polyvinyl last year after having been with Rohm & Haas Co, will coordinate activities between the Company's laboratories and its field sales force.

Mr Thoma, who was formerly with United Shoe Corp, will be located at the Company's main office in Peabody, Mass.

●

Quaker Chemical Products Corp, Conshohocken, Pa, has announced the appointment of *Jackson Bauer* as director of its Textile Research and Development Laboratories.

In this position he will have full responsibility for Quaker Chemical's Research and Development activities pertaining to specialty chemical products and processes for the textile industry. He joins Quaker from Collins & Aikman Corp, where he has been director of research and manager of product development, Automotive Division, Albemarle, NC.

●

Walter E Brewer has been named to the newly created post of general sales manager for the Industrial Division of Nopco Chemical Company, Newark, NJ.

Since 1959, Mr Brewer has been sales manager for Nopco's Textile Fiber Department and the firm's Jacques Wolf & Co subsidiary.

As the Industrial Division's general sales manager, Mr Brewer will work from Nopco's main offices at 60 Park Place, Newark 1, NJ.

●

Proctor Chemical Co, Inc, Salisbury, NC, has announced the winner of its annual scholarship. *Robert G Stoner Jr* of Richfield, NC, will be graduated from East Rowen High School in May and plans to enter North Carolina State College for the study of chemistry in the fall.

The scholarship has a total value of $2,000.

●

The $400 Keever Starch Company scholarship at North Carolina State College has been awarded to *Lindell G Stoker* of Albemarle, NC, a senior in the college's School of Textiles.

The Keever Starch Company of Greenville, SC, provides the annual scholarship to a deserving student at NC State College.

Mr Stoker will be employed by Cannon Mills Co, Kannapolis, NC, following his graduation.

●

Preston F Marshall has been appointed director of research for the Fiber Products Division of The Kendall Company, Walpole, Mass, which manufactures nonwoven fabrics and processes fibers for varied industrial uses.

Mr Marshall has been in the Research Department since 1955, and became assistant to the director of research about a year prior to his recent appointment.

●

Treplow Chemical Co, Paterson, NJ, a wholly owned subsidiary of the Richardson Company, Melrose Park, Ill, has appointed *Harry H Borowsky* manager of sales development and *William B Mason* Western sales manager. Mr Mason will be located at the main office of the Richardson Company.

Lawrence L Shailer has been named manager of trade advertising and sales promotion for B F Goodrich Chemical Co, Cleveland, O.

In his new position, Mr Shailer is responsible for BFG Chemical's public relations and technical literature programs in addition to advertising and sales promotion. He succeeds *George A Mentzer*, who has been advanced to a managerial post in the B F Goodrich corporate advertising group in Akron, O.

Mr Shailer was formerly sales development manager for textile chemicals and was responsible for promoting and coordinating the sale of products to the textile industry.

●

In a reorganization of its inorganic chemicals marketing group, Pennsalt Chemicals of Philadelphia has announced the appointment of *Donald Macfarlan* to the post of sales manager—inorganic chemicals. At the same time *Donald A King* was named product manager—inorganic chemicals.

The new organization is designed to streamline the handling of marketing problems for the Company's line of inorganic chemicals. The Company's organic chemicals marketing organization was modified in a similar move in January 1960.

Mr Macfarlan will have general responsibility for the marketing of all inorganic products and in addition, specific responsibility for the handling of caustic potash, hydrofluoric acid, bulk chlorine, aluminas and alum.

Mr King assumes responsibility for handling ammonia, hydrogen peroxide, cryolite, ferric chloride, cylinder chlorine, ammonium and potassium persulfates, and nitric, sulfuric and muriatic acids.

For the past five years Mr Macfarlan has been a product manager of inorganic chemicals. Mr King had been a salesman in the Company's Detroit region for several years before assuming his present assignment.

●

David L Pearson, a research chemist at Shell Development Company's research center at Emeryville, Calif, has been transferred to the company's chemical plant at Denver, Colo.

Dr Pearson was for six years a member of Shell's experimental plants department.

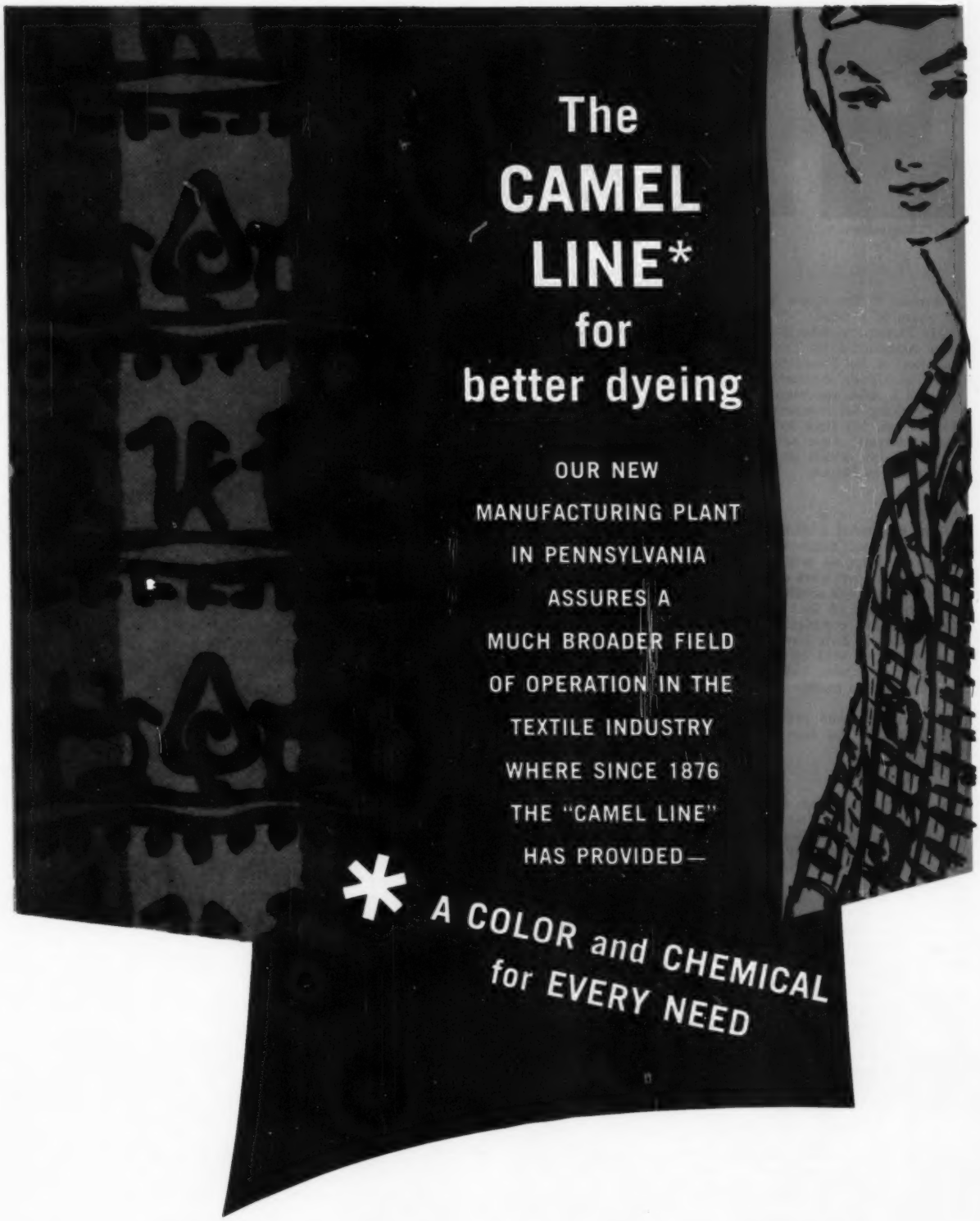
●

A E Staley Mfg Co, Decatur, Ill, has named *Owen W O'Neill* chemical sales supervisor, and *Donald L Winter* a technical assistant to *Thomas C Garren*, sales service supervisor.

Mr O'Neill has served as a management trainee for Staley's while Mr Winter has been an associate research chemist in the Research Division's technical service department.

●

James A Bennett, a dyer at Wabasso Cotton Company, Ltd, Three Rivers, Quebec, has completed a two-week period in the laboratory of Althouse Chemical Co, Reading, Pa, studying methods of dye applications to various textiles. Particular emphasis on the application of the direct dyeing colors on cotton piece goods by jig and newer high production methods of continuous applications were primary objectives. Mr Bennett is the sixth dyer to have taken this course of study.



JOHN CAMPBELL & COMPANY INC.
PERKASIE, PA.

BRANCH OFFICES • WAREHOUSES: BOSTON, MASS. • EAST CLEVELAND, OHIO • ATLANTA, GA.

Thompson

Wiggins

Gardner

Risch

Bergman

Mitchell

Arthur R Thompson has retired from Ciba Co, Inc after 27 years of service.

Mr Thompson, who is the national treasurer of the American Association of Textile Chemists and Colorists and a member of its Executive Committee, has been headquartered at Ciba's southern district in Charlotte, NC, where he was a sales representative.

Regarding his future plans, Mr Thompson states that he will devote his time to travel, hobbies and personal business interests. One of his first retirement activities is a world cruise, which he and Mrs Thompson undertook the last week in March.

• • •

Two personnel additions in the Company's southern district have been announced by Ciba.

Roy D Wiggins will be based in Charlotte and work under the supervision of E Pierce Ward, technical manager of the Company's southern district. *Donald A Gardner* also will work out of that office as a technical representative. Both men are completing specialized assignments at Ciba's home office in Fair Lawn, NJ.

Mr Gardner will concentrate his efforts and services in the printing trade. Before joining Ciba, he was secretary-treasurer and a member of the board of directors of Tillett-Gardner, Inc.

Mr Wiggins was previously with Rock Hill Printing & Finishing Co, The Kendall Co, and Hilton-Davis Chemical Co.

•

An expansion and reorganization of the Armour Industrial Chemical Company Derivative Sales Department into two separate selling groups has been announced.

L M Miller, formerly sales manager of nitrogen derivatives, has been appointed sales manager of industrial chemicals. *E L Rhoads*, as western regional manager, will relocate the regional office from Portland, Ore, to Los Angeles, Calif and will work closely with the Paul W Wood Co, Armour chemical sales agent in California. *K M Bierman*, as eastern regional manager, will provide technical sales support to the Raw Materials Co, sales agent in New England. *T F Yuschik* continues as central regional manager, headquartered in Chicago.

Sales manager of petroleum chemical sales will be *C D LaSusa*, formerly southern regional manager of derivative sales, who will he beadquartered in Dallas, Texas. *J E Maloney* has been named field sales manager of the unit. He was formerly petroleum chemicals industry manager. Additional sales personnel have been added as well as reassigned to each group.

•

Food Machinery and Chemical Corp has named *Robert E Cochran* assistant manager of sales for its Chlor-Alkali Division. Formerly alkali product manager, he will be replaced by *Richard M Hoyer*, who joined the Division as a sales manager of the southern district in 1951. In his new assignment, Mr Cochran will direct the Division's field sales force.

W L Riedeman has been named supervisor of the organic and polymer department of FMC's research and development center, Princeton, NJ, and *Elliott Farber* has been added as a research chemist. Dr Riedeman, who joined FMC last year, will supervise the department's synthetic organic program. Dr Farber was previously associated with the Texaco Research Center, Beacon, NY.

Theodore H Risch has been appointed general sales manager of the Newport Industries Division of Heyden Newport Chemical Corp.

Formerly field sales manager of the Corporation's Heyden Chemical Division, Mr Risch will be in direct charge of all marketing activities of the Newport Industries Division, which has recently expanded its sales department to meet its growing marketing needs.

Reporting to Mr Risch will be *J L Slattery*, field sales manager, and *L F Pinto*, manager of sales development, both of the Newport Industries Division.

•

General Dyestuff Co, Division of General Aniline & Film Corp, New York, NY, has appointed *C A Bergman* to the position of market manager—chemicals, and *Robert J Holmes* to the newly created position of acting product manager of the Blancophor line of optical brighteners.

Mr Bergman's most recent position with General Dyestuff was that of chemical sales manager, Southern Region, in Charlotte, NC. He will relocate in New Jersey.

Until his current appointment, Mr Holmes held the position of product engineer—Surfactants and Related Chemicals Department at Antara Chemicals, another division of GAF. The Blancophor product line was recently transferred from Antara to General Dyestuff Co's Marketing Group.

•

A R Mitchell has been transferred to New Chemicals Marketing, Union Carbide Chemicals Co, New York. Previously he was a technical representative for the company in the Philadelphia area.

In his new assignment, Mr Mitchell will be responsible for the market development of acrylate monomers.

•

New trustees of the Textile Research Institute elected at the annual meeting of the Institute members, held last month at the Hotel Commodore, New York, NY, are as follows: *Robert T Armstrong*, vice president & technical director, Celanese Corp of America; *D W Chaney*, executive director, Chemstrand Research Center, Inc; *Bertrand W Hayward*, president, Philadelphia College of Textiles and Science; *L O Koons, president*, Scholler Bros, Inc; *Richard T Kropf*, vice president & director of research, Belding Heminway Co, Inc; and *Paul B Stam*, director of research, J P Stevens & Co, Inc.

Reelected trustees are *Carlyle Harmon*, vice president & director of research, Chicopee Mfg Corp; *George H Hotte*, director, Fiber Marketing Dept, National Aniline Div; *Kenneth H Klipstein*, executive vice president, American Cyanamid Co; and *J G McNally*, vice president & director of research laboratories, Tennessee Eastman Co.

Retiring members of the board include *Bruce B Allen*, vice president & technical director, Celanese Fibers Co; *John P Baum*, vice president, J P Stevens & Co, Inc; *Malcolm E Campbell*, dean, North Carolina State College School of Textiles; and *Edward A O'Neal Jr*, president, The Chemstrand Corp.

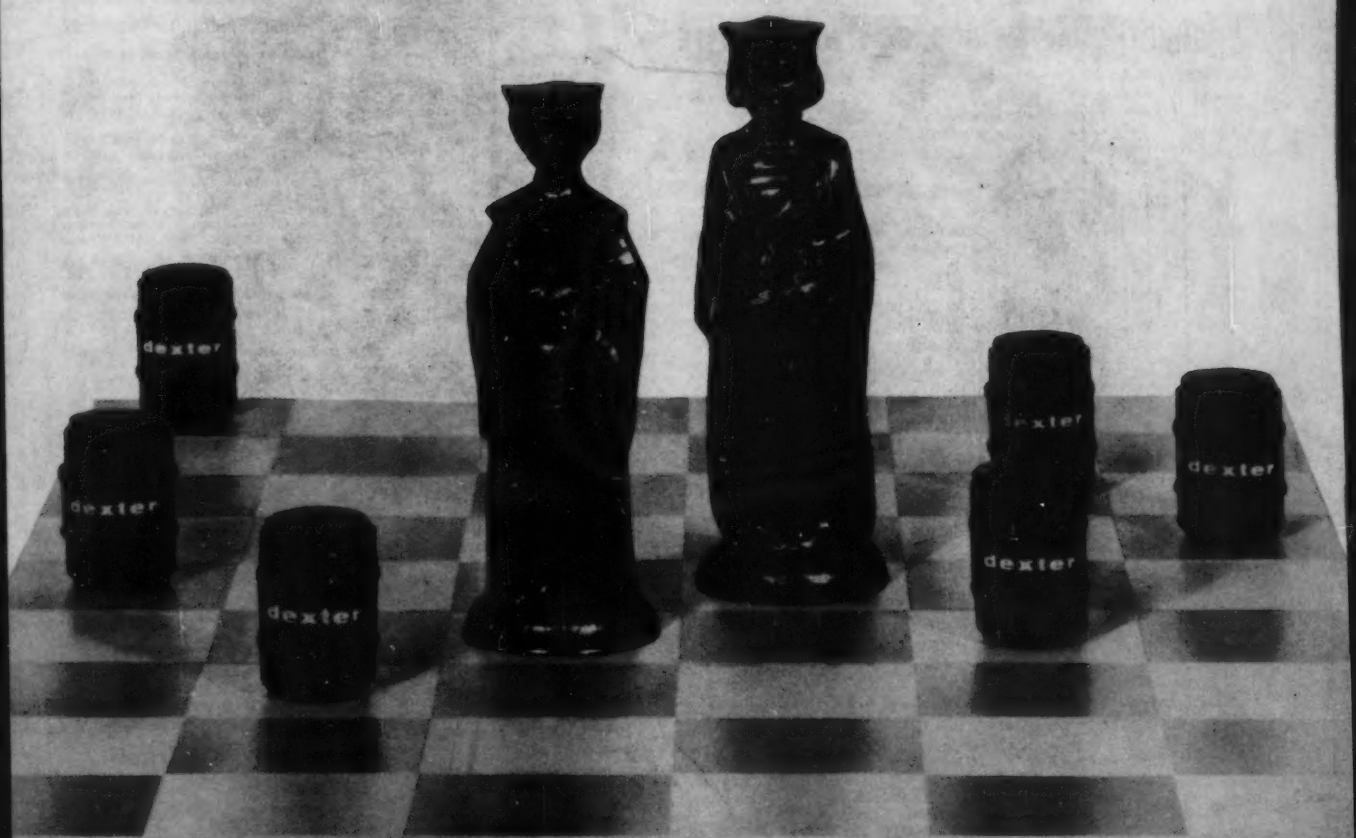
Corporate officers are *Russell W Peterson*, technical director, New Products Div, E I duPont de Nemours & Co, Inc, chairman of the board; *G T Gardner*, executive vice president, Riegel Textile Corp, vice chairman of the board; and *Levon M Yacubian*, vice president & general manager, The Barre Wool Combing Co, Ltd, chairman of the Finance Committee.

Operations officers are *John H Dillon*, TRI, president; and *Paul C Alford Jr*, TRI, secretary-treasurer.

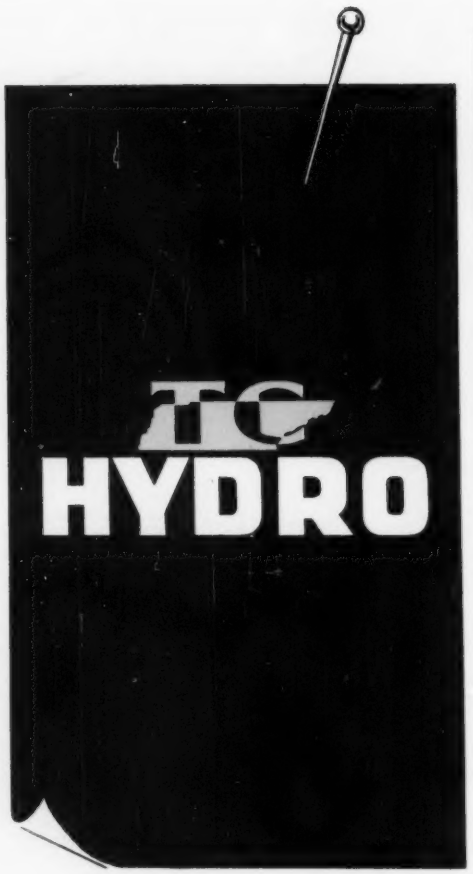
The right move

For best results
in wash and wear,
finish your goods
with
industry's finest
resin...

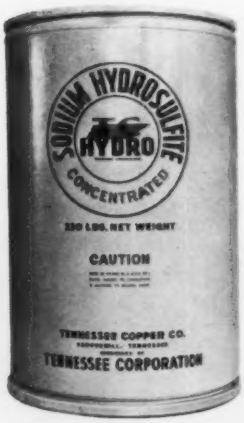
dextraset



dexter chemical corporation • textile chemical division, new york 59 • boston • charlotte • atlanta • greensboro • buenos aires



HIGHEST QUALITY SODIUM HYDROSULFITE



We invite inquiries.

We maintain a rigid quality control program from the ores we mine to the finished product—Your assurance of a product of highest purity.

TC Hydro is a dry, free flowing crystalline powder of uniform size and structure, dust free—a product of highest stability and uniformity.

TC TENNESSEE CORPORATION
612-629 Grant Building, Atlanta 3, Georgia

let's talk about...

Which of these LAUREL TEXTILE SPECIALTIES will help you cut your processing costs?

☐ Soaps—all titres—prepared to highest standards for every textile need—fulling, scouring and finishing. Raw stock, woolen and worsted goods. Scouring and dyeing all synthetic fibers. Soaping vat-dyed cotton yarns and piece goods.
☐ Olapon—a series of synthetic compounds for scouring and dyeing all natural and synthetic fibers.
☐ Hydrasol—cresylic acid scouring and kier assistants. Especially good for use on wool and cotton.
☐ Mercerizing Penetrants—a series of cresylic acid type penetrants for use with all strengths of caustic soda up to 80° TW. Non-cresylic types are also available.
☐ Laurel Transfer Remover—a line of products for all types of transfers to be applied by either wet or drying processing.
☐ Boil-off Compounds—Boil off oils, Triconate boil-off powders, Supersulfate neutral boil-off powders.
☐ Amine Condensates—straight and compounded to suit your requirements.
☐ Alkyl Aryl Sulfonates—Liquid, paste,l and powder. Neutral or built for all purposes. Amine or sodium salts available.
☐ Sulfated Esters—for wetting, dyeing, rewetting. Preshrinking assistant.
☐ Lauramine 20—superior packaged dyed yarn lubricant and softener. Does not yellow whites or alter shades.
☐ Lauramine 20A—A liquid form of Lauramine 20. Predispersed for simplified use.
☐ Catamine SF—excellent cationic softener for natural and synthetic fibers. Easily dispersed. Particularly effective on Orion and wool knitted fabrics.
☐ Sulfonated Oils—tallow, castor, olive, neatsfoot. Available straight or compounded for special finishing problems.
☐ Flame Retardants—a series of renewable type products to cover all requirements on cotton fabrics.
☐ Water Repellents—renewable type.
☐ Sizes—Resin and gelatine sizing and finishing compounds for all fibers and fabrics.
☐ Hydrocop & 3B Softener—Wax Emulsion WG, Wax Emulsion A, Ruxite A—for softening, conditioning, and lubricating all natural and spun synthetic yarns for knitting.
☐ Coning oils—for all synthetic yarns—filament and spun.
☐ Hosiery Finishes—a complete line of resin hosiery finishes.
☐ Dullers, Weighters and Conditioners—a full line to meet your requirements.
☐ Antifoams—quick, easy-to-use. Readily dispersed; stable.
☐ Antistatic Compounds—non permanent types for all fibers.

Check your needs . . . then tear out and mail this advertisement for complete details.

Laurel Brand — OVER 50 YEARS OF SERVICE TO INDUSTRY

Laurel
SOAP MANUFACTURING CO., INC.
TIOGA, THOMPSON & ALMOND STS. • PHILA. 34, PA.

Warehouses: Paterson, N.J. Chattanooga, Tenn. Charlotte, N.C. Greenville, S.C.

Deakyne

Claypoole

Barkley

Vogel

Kroeger

Goodman

Five organizational changes in the sales structure of the Heyden Chemical Division of Heyden Newport Chemical Corporation became effective April 1.

F A Degener has been appointed director of marketing; *W C Deakyne Jr* assumes the post of general sales manager, and *James Claypoole* becomes field sales manager in the reorganization.

Other new assignments in the Division include the appointment of *E L Barkley* as manager of sales development, and *E M Vogel*, district sales manager, New York and New Jersey.

Mr Degener was previously general sales manager of the Heyden Chemical Division while Mr Deakyne was formerly assistant general sales manager.

Mr Claypoole has been successively manager of Heyden's Philadelphia, New Jersey and combined New York—New Jersey sales districts.

Mr Barkley was most recently product sales manager, organic intermediate chemicals, for the Division.

Mr Vogel has been manager of the corporation's Houston district office since 1958.

●

Appointment of *E J Cook* to the sales staff of American Cyanamid Company's Dyes Department was announced last month by *M H Mettee*, department sales manager.

After a brief period of indoctrination, Mr Cook will be assigned responsibility for serving the paper industry in the Southeastern United States. His headquarters will be in the department's Charlotte, NC, office.

Mr Cook previously was a district technician for the Kelco Company with responsibility for sales service in that firm's Southern territory.

●

Appointment of *A James Johnston Jr* as assistant to the manager of the Organic Chemicals Section, Solvay Process Division, Allied Chemical Corp, was announced March 30.

Mr Johnston joined Solvay in 1953 and in 1957 was assigned to the Charlotte, NC, territory.

In his new position, Mr Johnston will work primarily with Solvay's chloromethanes, chlorobenzenes, aluminum chloride, hydrogen peroxide, and vinyl chloride.

●

Two changes have been made in assignments in the Product Engineering Laboratories of Dow Corning Corp, Midland, Mich. *Firth L Dennett* has been appointed manager of the Fluids Section as well as the Fiber Treatment Section, and *Joseph W Keil* has been given the new position of project manager, New Products Development Department.

C C Currie is giving up supervision of the Fluids Laboratory to devote full time to managing the New Products Development Department. Mr Dennett will consolidate the similar technology of the Fluids and Fiber Treatment Laboratories.

●

C L Michaud has joined Polymer Industries, Inc, a producer of textile specialty polymers, as a liaison supervisor between the plant and laboratory.

Mr Michaud was formerly with the Celanese Corp, Borden Chemical Co and served as a consultant to several chemical manufacturing companies.

●

William F Piekarski has joined Troy Mills Inc, Troy, NH, in the capacity of superintendent of the Woven Fabrics Division.

Mr Piekarski was formerly associated with the J P Stevens Co in Massachusetts as assistant superintendent, and previously as assistant director of quality control. In addition, he has been with the Waumbec Dye and Finishing Co and the Derby Co.

William Q Goodman has been appointed to head sales and technical service of organic chemicals in the Southeast territory for Wilson-Martin, Div of Wilson & Co, Inc, Philadelphia, Pa.

Mr Goodman, a graduate organic chemist who specialized in textile chemistry, will continue to reside in Greensboro, NC. He was previously with Cindet Chemical Company in Greensboro as development chemist.

●

John Kroeger has been named sales manager of Shell Chemical Company's industrial chemicals division at the head office in New York.

Mr Kroeger, who was ammonia department manager in San Francisco, succeeds *W Q Mooney*, appointed recently to the newly created post of manager of trade relations.

●

Larrie S Calvert has been assigned to cover the chemical sales territory in St Louis and Kansas City, Mo, for Antara Chemicals, succeeding *J A Czerwinski*, who was assigned to a new territory on the West Coast.

Mr Calvert joined the company in 1959 as a trainee in the Chicago Branch Laboratory. Early in 1960 he was moved to the position of manager, college relations with the responsibility of coordinating the Dyestuff and Chemical Division's (now the Chemical Group's) college recruitment program.

●

As a part of its reorganization program, an International Group has been formed within General Aniline & Film Corp with *William Hansot* as general manager.

The main operations of the GAF are now divided into three groups, consisting of five divisions. The groups are now known as The Chemical Group, consisting of the Antara Chemicals, Collway Pigments and General Dyestuff Co Divisions; the Photo & Repro Group, composed of Ansco and Ozalid Divisions, and the International Group. The Corporation was formerly comprised of only three divisions, namely, Ansco, Ozalid and the Dyestuff & Chemical Division.

In his new position, Mr Hansot will be responsible for the planning, operational direction, and control and expansion of the Company's foreign operations.

S H Williams, vice president, will assist in co-ordinating the marketing plans and programs and also continue to serve as advisor to the president on international developments.

Hector C Borghetty, as manager of marketing for the International Group, will direct export sales for the Corporation, co-ordinating the marketing of the export products of the various divisions.

Mr Borghetty's staff will consist of *Claude Pilger*, export manager, Ansco Division; *G H Paul*, export manager, Ozalid Division; *A Rimlinger*, export manager, chemicals; and *G E Neisser*, export manager, dyestuffs and pigments.

B J Hope was appointed controller for the new International Group.

●

JAMES WORTON

JAMES WORTON, 70, retired since 1955, died March 19 after a long illness.

A graduate of Dartmouth College, Mr Worton taught chemistry and dyeing and coached soccer, baseball and basketball at Bradford Durfee College of Technology, Fall River, Mass. He was a salesman for Geigy Chemical Corp in southern New England prior to his retirement.

Mr Worton was a member of Phi Psi Fraternity, and a former member of AATCC.

TECHNICAL LITERATURE

(Literature is available from sources listed in italics)

A REVIEW OF COST ANALYSIS IN AGRICULTURAL UTILIZATION RESEARCH—*Southern Utilization Research and Development Division, P O Box 19687, New Orleans 19, La*—A review of recent cost studies on processes developed in agricultural utilization research at the U S Department of Agriculture's Southern Utilization Research and Development Division, New Orleans, La, has been published and is available for distribution.

The nature and variety of cost estimation, its usefulness in planning and evaluating research, and its importance in process and product development, and commercialization are discussed in ARS 72-22. Authors of the report are K M Decossas, E F Pollard, and E L Patton.

Cost research is covered on chemically modified cotton, and includes partial acetylation; full acetylation; padding-curing finishes; aminization; THPC-MF resin treatment; carbamoylethylation; phosphonomethylation; APO resin treatment; APO-THPC resin treatment; formic acid colloid of methylolmelamine resin treatment; carboxymethylation; hydroxyethylation; cyanoethylation; and "wash-and-wear".

The report also covers cost studies on oilseed products and their derivatives such as gossypol, cocoa butterlike fat, and tung oil-resin varnish vehicle; and the filtration-extraction process for direct solvent extraction of oilseeds.

Cited are 69 literature references in the cost studies, many of which contain detailed reports on the processes developed at the Southern Division.

Single copies of the booklet may be obtained without cost.

●

ABSTRACTS OF LTI GRADUATE THESES—*Office of Special Services, Lowell Technological Institute, Lowell, Mass*—Abstracts of graduate theses in partial fulfillment of degree requirements submitted in 1959-1960 to the Graduate School at Lowell Technological Institute have been published as the winter quarterly bulletin of the Institute, series 64, no. 3.

Theses areas include textile chemistry, textile engineering, electronic engineering, leather chemistry, physics and mathematics.

●

ACRYLONITRILE—*Union Carbide Chemicals Co, 270 Park Ave, New York 17, NY*—This new 25-page booklet describes the properties and uses of acrylonitrile.

Included is information on physical properties; reactions; applications, specification limits; test methods; storage, handling, and shipping; toxicological properties; and selected literature references.

Acrylonitrile, a colorless, volatile liquid, is only slightly soluble in water but miscible with many organic solvents. Because of the position of the double bond and nitrile group, many paths of chemical modification are possible.

As a monomer or comonomer for synthetic textile fibers, acrylonitrile allows polymeric materials to form oriented fibers. Acrylonitrile also undergoes many reactions to form compounds used as solvents; plasticizers; and intermediates for dyes, pharmaceuticals, and insecticides.

●

AMERICAN WOOL ROUND-UP—*Woolens and Worsteds of America, Inc, One East 42nd St, New York 17, NY*—A fifth printing of "American Wool Round-Up," the story of wool "from sheep to shop," has been completed, according to Woolens and Worsteds of America, which reports that more than 100,000 copies of the booklet already have been distributed.

The booklet, which features a complete glossary of popular American wool fabrics, also contains a compilation of facts and stories dealing with the history of the American wool industry, as well as information on wool fiber characteristics and the care and handling of wool apparel and other products.

●

BUTYL BENZOATE—*Kolker Chemical Corp, 600 Doremus Ave, Newark 5, NJ*—Designed for the textile and specialty coating industries, butyl benzoate is available in commercial quantities as a low-viscosity, oily liquid with characteristically sweet, pleasant odor. It is said to be of uniform composition and extremely high purity.

Bulletin is subdivided into the following sections: Introduction; Description; Applications; Carrier Dyeing of Hydrophobic Fibers; Packaging, Warehousing and Shipping. Under the Applications category is a description of the product's use in the textile industry as a dye carrier.

Tables listing physical properties, specifications, and solubility in resins are included.

●

CAUSTIC SODA—*Technical Literature Dept, US Industrial Chemicals Co, 90 Park Ave, New York 16, NY*—A new 40-page booklet, supplemented with graphs and tables, gives a comprehensive survey of the chemical and physical properties of caustic soda. Because of the large-volume applications that caustic soda has in chemical and fiber production, this booklet has also devoted special sections to the determination of costs of caustic shipments, and to a discussion of the best methods for handling and shipping.

●

CHARTS AND INKS—*Specification S 230-1, G A Reed, product editor, Minneapolis-Honeywell Regulator Co, Industrial Division, Wayne and Windrim Aves, Philadelphia 44, Pa*—New chart and ink catalog gives complete story of how Honeywell charts and inks are made. Partial lists of the most commonly used *ElectroniK* strip and circular charts, and pneumatic and electric Tel-O-Set charts are also included. For complete information send for Catalog G-100-6.

●

CHEMISTRY OF LACTONITRILE—*Petrochemicals Department, American Cyanamid Co, Bound Brook, NJ*—This technical bulletin, complete with bibliography, describes the applications, reactions and properties of the bifunctional chemical lactonitrile. It discusses the more than twenty classic reactions of this versatile intermediate, and mentions all known applications for its reaction products.

●

CHROMALOX INDUSTRIAL HEATING CATALOG SUPPLEMENT—*Advertising Dept, Edwin L Wiegand Co, 7500 Thomas Blvd, Pittsburgh 8, Pa*—As an appendix to its current Chromalox industrial electric heating catalog, No. 60, Edwin L Wiegand Co has announced new catalog supplement CS-600.

The new supplement contains specifications and product illustrations of Chromalox electric heater bands, air heating elements, blower-type heaters, immersion units, engine heaters, mineral insulated heating cable, special radiant heaters for process and comfort heating, controls and various other elements and equipment.

●

COMPARATIVE CHEMICAL AND PHYSICAL PROPERTIES OF WOOL FELTS FOR MECHANICAL AND INDUSTRIAL USES—*American Felt Co, Glenville, Conn*—This eight-page bulletin (No. 8-60) is especially intended to be of use to those concerned with mechanical and industrial applications to which wool felts can be put. It serves as a reference guide to the most frequently used SAE and Commercial Standard Grades of wool felts. It covers four major subdivisions of felt properties—general, physical, mechanical, chemical-environmental—and 36 standard grades of wool felt with their corresponding Company merchandise numbers. In addition to a description of the special properties of each felt type, it also gives a brief account of the fabrication capabilities and typical uses for each felt. The back page of the bulletin describes the natural and synthetic fiber felts in the Company's complete line of A-Plus felts and lists the location of its 16 sales offices.

●

COMPILATION OF ASTM STANDARDS ON TEXTILE MATERIALS—D-13—*$9.75; ASTM Headquarters, 1916 Race St, Philadelphia 3, Pa*—The 1960 edition of the compilation of ASTM Standards on Textile Materials contains 139 standards of which 24 are new, revised, or have had their status recently changed.

Among the new standards are: Test for Neps in Wool Top; Test for Imperfection Count of Textile Yarns; Method of Testing Elastic Fabrics; and Test for Colorfastness to Commercial Laundering and to Domestic Washing of Tufted Rugs and Carpets.

Topics covered in the compilation include: Wool Textiles; Man-Made Fiber Textiles; Glass Textiles; Cotton Textiles; Bast and Leaf Fiber Textiles and Kraft Yarns; Tire Cord;

DE PAUL....

the Name dyers can rely upon.

DEPCO PRODUCTS:

A complete line of scouring agents detergents, finishing products, carriers, for tricot and woven piece goods.

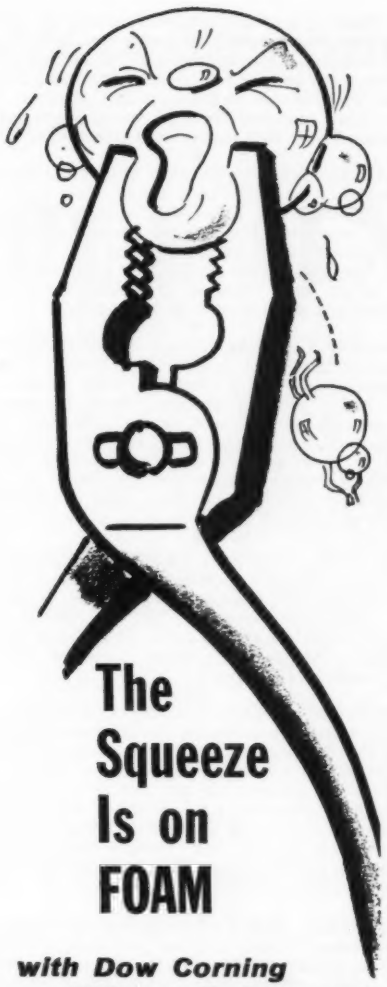
DEPCO SCOUR MI
DEPCOGEL
DEPCOPAL
DEPCO LEVEL 52
DEPCO LEVEL ACD
DEPCO RETARDER N
DEPCO RETARDER DA
DEPCO DYE ASSIST OW
ACETATE TRICOT WEIGHTER
NYLON TRICOT WEIGHTER
PERMADULL C
POLYEMULSION WW
DEPCOSOL LX
DEPCOFUME S
DEPCOSTAT H

SHIRT SLEEVE ASSISTANCE ON ALL YOUR PROBLEMS-

DE PAUL
CHEMICAL CO. INC.,

44-27 PURVIS STREET
LONG ISLAND CITY 1, N. Y.
So. Repr.:
D. W. ADAMS, HICKORY, N. C.

CAN. REPRESENTATIVE
CHEMTEX LTD., TORONTO



The Squeeze Is on FOAM

with Dow Corning Silicone Defoamers*

There's a *right* tool for every job. In foam control it's Dow Corning silicone anti-foamers or defoamers . . . job-proved thousands of times over as the most efficient, most economical, and most versatile foam suppressors available.

* At prescribed levels, are sanctioned by FDA

FREE SAMPLE
and new manual on foam control

first in silicones
Dow Corning CORPORATION
MIDLAND, MICHIGAN
Dept. 0416

Please rush a FREE SAMPLE of a Dow Corning silicone defoamer for my product or process, which is (indicate if food, aqueous, oil or other): _____

NAME _____

POSITION _____

COMPANY _____

ADDRESS _____

Carpets; Hosiery; and Nonwoven Fabrics. In addition the volume contains standards on: terms and definitions; conditioning; sampling; qualitative and quantitative analysis; and resistance to insects and microorganisms. Fibers, fabrics, yarns, threads and cordage are also covered. Fourteen appendices and additional related material are included in this volume.—946 + xxii pages, hard cover, 6 × 9".

●

DRIMARENE DYESTUFFS FOR THE PAD-ROLL PROCESS—*Sandoz, Inc, 61-63 Van Dam St, New York 13, NY*—The use of Drimarene fiber-reactive dyestuffs for dyeing cotton and regenerated cellulosic fibers by the Pad-Roll process is described in an appendix to Sandoz shade card No. 1400. The method of application is said to be simple; and due to the easy removal of unfixed dyes, extremely good wetfastness is obtained, it is stated.

●

DRIMARENE-X, PRACTICAL EXPERIENCE—*Sandoz, Inc, 61-63 Van Dam St, New York 13, NY*—In a folder which is an appendix to Pattern Card No. 1426, Sandoz, Inc describes a resist printing process which reportedly gives strongly contrasting half-tone shades. Glucose or Lyogen DK are the resisting agents used, and the resist paste can be printed under or over the other print colors. The formulas for the Drimarene prints are the same as those for normal printing on cellulosic fibers, and the steaming and washing-off operations also remain unchanged.

●

DYEING AND FINISHING TEXTILES, EXCEPT WOOL FABRICS AND KNIT GOODS (1958 CENSUS OF MANUFACTURERS)—*35¢; Supt of Documents, U S Government Printing Office, Washington 25, DC*—Industry report MC58(2)-22C from the 1958 Census of Manufactures is one of a series of 80, each of which provides statistics for groups of related industries.

●

ELECTRONIK CONTROLLERS—ELECTRIC, PNEUMATIC—*G A Reed, product editor, Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne and Windrim Aves, Philadelphia 44, Pa*—New 56-page catalog covers complete line of *ElectroniK* controllers—pneumatic and electric. This detailed, highly illustrated catalog covers new modular design features as well as the new proportional plus reset plus rate control units, partial chart listings, and pneumatic and electric contact control forms. For more information, write for Catalog C-15-2a.

●

FABRIC SHIFT TESTER—*Instrument and Apparatus Div, United States Testing Co, Inc, 1415 Park Ave, Hoboken, NJ*—The Fabric Shift Tester, developed for laboratory evaluation of fabric "blistering," is described in this new bulletin.

It reportedly conforms to the requirements of American Society for Testing Materials, American Standards Association, and Federal Specifications. It measures yarn distortion in woven fabrics after surface friction has been applied. This condition, known as "blistering," is prevalent in low-count filament yarn structures, and impairs the surface appearance of the fabric by displacement of the warp or filling yarns through sliding or shifting.

●

KLAUDER WELDON GILES PADDLE WHEEL DYEING MACHINES—*Klauder Weldon Giles Machine Co, Adams Ave & Leiper St, Philadelphia 24, Pa*—Four-page illustrated brochure offers descriptive material and specifications for KWG paddle wheel dyeing machines plus material on KWG double-reel skein-dyeing and KWG hoist-type skein-dyeing machines.

●

KNIT SHRINKAGE GAUGE—*Instrument Marketing Div, United States Testing Co, Inc, 1415 Park Ave, Hoboken, NJ*—The Knit Shrinkage Gauge, developed to provide true shrinkage measurement for both circular and warp knit goods, is described in this new bulletin.

Many knit goods which show a very high initial dimensional change in laundering are restored to near normal measurements by tensions occurring during drying, pressing, or wearing. The Knit Shrinkage Gauge is designed to indicate the ability of these fabrics to return to original size after restoration and also the restoring force of the fabric. The instrument reportedly provides true shrinkage values for both circular and warp knit goods and gives good correlation with performance in actual use. The Knit Shrinkage Gauge is said to meet the requirements of standards set forth be the American Society for Testing Materials, the American Standards Association, and AATCC.

KOPPERS HALOWAX CHLORINATED NAPHTHALENES—*Tar Products Div, Koppers Co, Inc, Pittsburgh 19, Pa*—In Bulletin T-203, solubility and general compatibility with other materials are described for the family of Halowax products. Comparative tables of chemical and physical properties are included for each of the eight Halowax materials.

Halowax materials have wide use as elements of flame-proofing compounds and as binders.

The bulletin is graphically illustrated with a series of charts depicting variations in fundamental properties.

●

MAXIMIZE FILTER PERFORMANCE WITH AFCO FEUTRON FILTER CARTRIDGES—*Filter Products Div. American Felt Co, Glenville, Conn*—Eight-page brochure describes a new concept in filter cartridge design and manufacture achieved by American Felt Company and explains how this results in better performance and longer filter life.

Technical data includes a viscosity flow rate conversion chart, viscosity table for a variety of liquids at 68 and 70°F, and water flow rate properties, together with illustrative graphs and examples.

A section of the booklet describes the construction of the Afco Feutron cartridge and explains why the synthetic fibers and their construction around a corrosion-resistant core provide a new concept. Controlled micron ratings are obtained by using synthetic fibers of different deniers, and the arrangement of the filter media around the core provide "edgewise" filtration which is said to be unique in the field of liquid filtration cartridges.

●

METALSMITHS CATALOG—*Metalsmiths, 560 White St, Orange, NJ*—New four-page catalog illustrates and describes line of corrosion-resistant pails, batch cans, stock pots, hand scoops, dye and starch buckets, measures, standard beakers, measuring dippers, funnels and shovels. Stock items are made of Type 304 stainless steel. Also available in Type 316 stainless and Monel. Latest prices are included.

●

NATIONAL RETAIL MERCHANTS ASSOCIATION—*Doris T Cornell, Member Relations Director, National Retail Merchants Assoc, 100 West 31st St, New York 1, NY*—This colorful brochure describes NRMA's many services as well as full information on membership.

The NRMA is the only international retail trade organizatizon dedicated to increasing efficiency in the operations of retail stores.

It maintains a staff of retail experts in all phases of retail activity, including credit, labor relations, merchandising, personnel, research, sales promotion and store management.

●

NEW TAPE SKEIN DYEING—*Klauder Weldon Giles Machine Co, Adams Ave & Leiper St, Philadelphia 24, Pa*—Illustrated specification sheet lists various features of KWG Machine Co's tape skein dyeing machine.

●

NEW TECHNIQUE FOR AIR POLLUTION CONTROL—*Rhodia, Inc, 60 East 56th St, New York, NY*—This booklet describes a unique method of chemically eliminating objectionable odors resulting from industrial processing.

Through an inexpensive process, specially tailored chemicals are blended with the source of the odor problem to create a clean, fresh, pleasant quality, with almost no discernible trace of either the original odor or the chemicals, it is claimed.

●

NORCROSS SIZEOMETER—*Norcross Corp, 247 Newtonville Ave, Newton 58, Mass*—Illustrated bulletin No. V-1220 offers principle of operation, features, benefits and application data for the Norcross Sizeometer, an automatic system for preparing size.

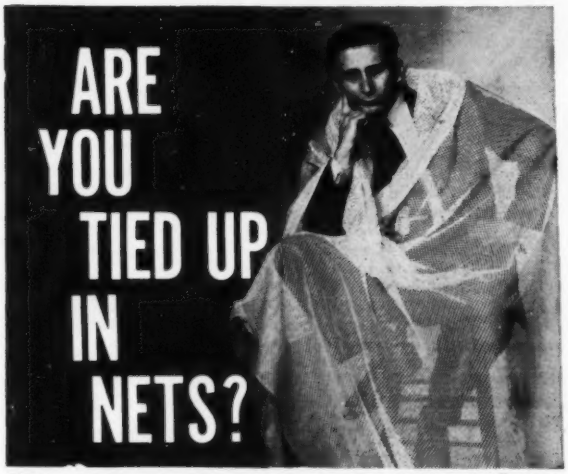
●

OAKITE 99—*Oakite Products, Inc, 154A Rector St, New York 6, NY*—Service Bulletin No. 20B describes Oakite 99, an emulsion detergent for cleaning of textile machinery.

According to information contained in the bulletin, solutions of the compound, made up at one part to 20 parts of water, are sprayed or brushed on equipment. After a short soak of two to five minutes, the emulsified soils are removed by blowing down with compressed air, or wiping off with a cloth. Surfaces are said to be left dry, free of tacky residues. No water rinse is necessary.

Because the water emulsions of Oakite 99 do not burn, the cleaning solution is said to be safer than many common solvents. Emulsions reportedly have a mild odor, are easy

Fablok Versadye Nets are used thruout the Industry by the most progressive mills!



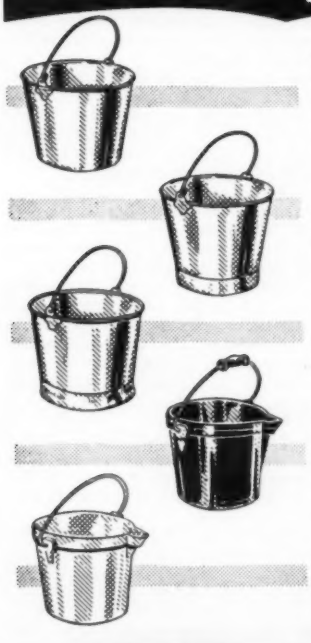
Tied up with a dyeing problem? ● Fablok Versadye® Nets solve that problem . . . give you complete dye-bath penetration without absorbing, whether you're dyeing sweaters or knitted fabrics of Orlon®, Dacron®, Nylon or Acrilan. ● Fablok knits superior synthetic Nets to the exact specifications you require (from yarn to finished product).

Send us your inquiry in full detail. We'll "tailor" the Net to fit your need.

* DuPont trademarks

Fablok MILLS, INC.
INDUSTRIAL NET DIVISION
46 Cordier St., Irvington, N. J.

CORROSIVE RESISTANT PAILS



STAINLESS STEEL. Heavy gauge and seamless, with extra thick rims and bottoms, these pails can take rough handling without life-shortening effects. Plain or chime bottom. Sizes: 13, 16, and 20 quart.

TYPE 316 STAINLESS. For extra corrosion resistance with acids and other corrosive chemicals, Type 316 Stainless pails should be used. Plain and chime bottom. Sizes: 13, 16, and 20 quart.

MONEL. These welded Monel pails remain virtually unaffected by the corrosive attack of brine, most types of volatile fluids, acids and alkalies. Sizes: 12, 14, 16, and 20 quart.

HARD RUBBER. Made with a virgin rubber base, this pail will not crack or chip; it resists abrasion, heat distortion, and the corrosive action of a wide variety of chemicals. Capacity, 3 gallons, graduated 1 to 12 quarts.

POLYETHYLENE. Unbreakable and quite chemically inert, this pail is molded in one piece, with bale handle and broad pour spout for easy pouring. Extra heavy construction. 2½ gallon capacity only.

READING SCIENTIFIC COMPANY
READING, PENNA.

Treat Your Wash-and-Wear to

"POL-E-TEX"

THE *Permanent* FINISH THAT PUTS MORE *Sales Appeal* IN WASH-AND WEAR GARMENTS!

"POL-E-TEX" . . . for natural or synthetic fabrics. Assures better lubrication, hand and drape. Improves the tear strength, crease recovery and abrasion resistance of crease-proofing resins. Reduces needle cutting.

Other advantages include high resistance to wear and dirt pick-up; no chlorine retention; no discoloration; no aging rancidity; requires no curing.

Just Try it!

LeaTex CHEMICAL COMPANY
2722 NORTH HANCOCK STREET • PHILADELPHIA 33, PA.

on the hands and are pleasant to use. They do not affect sound painted surfaces, it is reported.

●

ONYX PRODUCTS—*Onyx Chemical Corp, 190 Warren St, Jersey City 2, NJ*—Catalogue lists the more than 100 surfactants and specialty products that the Company produces for the industrial and textile trade. These are listed along with their chemical and physical descriptions, and suggestions for specific applications and general use.

●

PREVENTOL GD AND PREVENTOL GDC—*Antara Chemicals, a Division of General Aniline & Film Corp, 435 Hudson St, New York 14, NY*—This 16-page brochure describes the characteristics of Preventol GD and Preventol GDC, two of the company's new fungicidal and bactericidal agents. These nonvolatile, chemically stable, and non-irritating agents are recommended by Antara for the processing and preservation of textiles, latex, and organic liquids and pastes.

Other useful information given includes typical data on the compounds, including solubility, shipping specifications, preparation and properties of alkaline solutions, summary of uses, microbiocidal activity, toxicity data, method of analysis, and a bibliography.

●

PROCEEDINGS OF THE NATIONAL CONFERENCE ON WATER POLLUTION—*Superintendent of Documents, Washington 25, DC*—The Proceedings of the National Conference on Water Pollution, held in Washington, DC, last December 12-14, are now available in full and complete form (PHS Publication Number 819).

The document of more than 600 pages includes: 1) all major addresses presented at the opening and closing plenary sessions; 2) comments of members of Congress who served on a panel the evening of the Conference banquet; 3) complete reports of the subcommittees representing each of the panels; 4) the public floor discussions accompanying each report; 5) recommendations of the Conference; and 6) appendixes.

The four panel themes, which were discussed concurrently and at length, were: I—Water Pollution and Our Changing Times: Effects of Pollution on the National Health, Welfare, and Economy; II—Meeting the Growing Competition for Water: Pollution Control as a Means of Increasing Water Supplies; III—Keeping Water Clean: Responsibilities of Government, Industry, and the Public; and IV—Research and Training: Critical Needs for Research, Resources, and Training.

Single copies are available on a complimentary basis from a limited supply. They are on sale from the Superintendent of Documents at $2.25 per copy.

●

PYREX BRAND "DOUBLE-TOUGH" DRAINLINE—*Plant Equipment Dept, Corning Glass Works, Corning, NY*—Revised and expanded Bulletin PE-30 (illustrated) contains product and property data and lists advantages of the corrosion-resistant glass system for disposal of chemical wastes.

The catalog contains full details on available fittings. Photographs, schematic drawings and charts are included along with a sample specification sheet.

●

RECORDER, CONTROLLER SPECIFICATIONS—*G A Reed, product editor, Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa*—Specifications sheets covering Minneapolis-Honeywell's new advanced line of *ElectroniK* 17 recorders and controllers are now available.

All of the major components of these modular instruments—motor, range card, actuation board, case, etc—are interchangeable. Instruments make use of a new measuring circuit, are portable, fit a standard 19-inch relay rack, and have a calibrated accuracy of ¼% of instrument span. The controllers offer a variety of adjustable electric contact control units to provide a maximum of four auxiliary and threee off-set contact control settings.

For more information, write for specification sheets:

Recorders—S 172-1 Circular Chart Recorder, S 173-1 Strip Chart Recorder, S 176-1 Circular Scale Indicator

Controllers—S 172-2 Circular Chart Controller, S 173-2 Strip Chart Controller, S 176-2 Indicator Controller

●

RETAIL EXECUTIVES' GUIDE TO FIBERS, FABRICS AND FINISHES—*25¢; Dow Corning Corp, Midland, Michigan*—This 48-page reprint edition is especially written for merchandise managers, buyers, and sales personnel to spotlight up-to-date information on textile fibers, blends, dyes and finishes. Its purpose is to help dispel the existing confusion on these textile subjects in the minds of retail executives for more profitable promotion of soft goods merchandise. Among subjects covered by the booklet in nontechnical language are: Natural Fibers, Man-Made Fibers, Woven and Nonwoven Fabrics, Bleaching and Brightening, Dyestuffs and Dyeing, Finishing for Shrinkage Control, Wash-and-Wear, and Water-repellent Finishes.

●

RUSSIAN TEXTILE LITERATURE TRANSLATIONS—*Office of Technical Services, Business and Defense Services Administration, U S Dept of Commerce, Washington 25, DC*—Soviet research aimed at improving the quality of waterproof fabrics is reviewed in a translation from a Russian textile magazine. The article is one of four translations of Soviet technical literature released to science and industry. The four translations are:

60-21798—IMPROVE THE QUALITY OF WATERPROOF FABRICS. 1960, 15 pages, 50 cents. Translation of *Tekstil'naya Promyshlennost'* (USSR) 1955. P A Simigin.

60-21809—CHANGES IN THE HEAT-INSULATING PROPERTIES OF PADDED LININGS. 1960, 13 pages, 50 cents. Translation of *Legkaya Promyshlennost'* (USSR) 1957. L I Tret'yakova.

60-31843—CONFERENCE OF SPECIALISTS IN CHEMICAL FIBER PRODUCTION OF THE PARTICIPATING COUNTRIES OF THE COUNCIL OF ECONOMIC MUTUAL AID. October 1960, three pages, 50 cents. Translation of *Khimicheskiy Volokna* (USSR) 1960.

60-21794—INFLUENCE OF MOISTURE IN FOOTWEAR MATERIALS ON THEIR WARMTH-PROTECTING QUALITIES. 1960, 8 pages, 50 cents. Translation of *Legkaya Promyshlennost'* (USSR)1958. Ye A Miroshnikov.

●

SAFETY IN FORK LIFT TRUCK OPERATION—*20¢; Manufacturing Chemists' Association Inc, 1825 Connecticut Ave, NW, Washington, DC*—Recommended safe practices and procedures in the operation and service of fork lift trucks are described by MCA in sixth in the Association's series on industrial safety guides.

The pamphlet (SG-6) emphasizes that use of fork lift trucks, whether powered electrically, by diesel, gasoline or liquified petroleum gas, in hazardous areas in which flammable gases, vapors or dusts may be present, may require special safety features and that provisions of Standard No. 505 National Fire Protection Association must be strictly enforced.

Use of these powered machines in warehouses and industrial plants can result in a marked saving of time and physical effort, the Safety Guide states. "However, serious accidents have resulted from misuse and therefore rigid safety regulations must be set up and followed."

The purpose of the safety guide, the Association stated, "is to give assistance in setting up these safety regulations and through emphasis on responsibility, on employee training, on equipment maintenance, and on correct application of each type of fork lift truck, to contribute towards greater safety in the chemical manufacturing industry."

●

SANDOZ CIRCULAR No. 1425—*Sandoz, Inc, 61-63 Van Dam St, New York 13, NY*—Circular No. 1425 contains illustrations and rate-of-dyeing curves for the continuous dyeing of cotton and regenerated cellulosics with two fiber-reactive dyes, Drimarene Turquoise Z-G and Drimarene Navy Z-BL paf. The circular describes their application to the dyebeck, jig, and package machines. Fastness tables show that, in this type of application, the dyes attain the high wetfastness that is characteristic of the reactive class. A copy of the folder is available to mills and dyehouses which can put the information to practical use.

●

SERIPLANE—*Instrument and Apparatus Div, United States Testing Co, Inc, 1415 Park Ave, Hoboken, NJ*—The Seriplane, a precision-engineered laboratory instrument developed for visual inspection of all types of yarn, is described in this new bulletin.

It is used to detect imperfections and for gauging evenness, neatness, and cleanness in all types of yarns—natural fibers, synthetics, or blends. Wide panels provide for multiple sets of yarns which may be wound and inspected simultaneously. These panels, when compared with photographic standards of various types of yarns, provide a basis for systematic, numerical grading as prescribed by the United States Department of Agriculture, American Society for Testing Materials, and the International Silk Association.

The great **NATURAL** dye

FOR MAXIMUM PENETRATION...
RIGID QUALITY STANDARDS...
SPECIFY:

JAMAICAN
LOGWOOD
BLACK

Preferred by the experts

... the best **BLACK**

... the deep **BLACK**

... the clean **BLACK**

... the uniform **BLACK**

... the low-cost **BLACK**

... the fast **BLACK**

... the simple dyeing method for nylon, silk, and wool ... use Hematine from Jamaica.

Available in powder, crystal, or liquid.
Write for detailed information.

U.S. Distributor
AMERICAN DYEWOOD CO., INC.
374 MAIN ST., BELLEVILLE, N. J.
The West Indies Chemical Works, Ltd.
70 Wall St., New York 5, N. Y.

"Graphtex" FOR

"Graphtex" is THE Scour for Removing Graphite from Nylon Lace!

LeaTex

LeaTex CHEMICAL COMPANY
2722 NORTH HANCOCK STREET • PHILADELPHIA 33, PA.

SOLE-TERGE 60—*Sole Chemical Corp, 7740 South Chicago Ave, Chicago 19, Ill*—Sole-Terge 60 is a liquid, high-foaming-type detergent concentrate, formulated into various low-cost industrial products, including textile specialties. A surfactant which is 80-85% active, Sole-Terge 60 is said to be alkali stable for "built" formulation, and to exhibit hard or soft water compatabilities for wide market usage. Bulletin #1260-1 provides a further description of this chemical, lists its properties, suggests uses for it, and offers shipping data.

•

SURVEY OF MANUFACTURING ACTIVITY IN AUSTRALIA—*New South Wales Government Office, Dept P, 680 Fifth Ave, New York 19, NY*—A new comprehensive report of Australia's textiles, chemicals, and paper industries has been prepared by the Commonwealth's Department of Trade. The 28-page study shows the following upward industry trends:

. . . Twenty percent rise in wool yarn output and sales since 1959.

. . . Caustic soda production doubled in the past 10 years.

. . . Paperboard production and consumption up 25% since 1957.

US firms already operating in Australia include: Bigelow-Sanford, Jantzen, Owens-Corning Fiberglas, BVD, Bates Fabrics, Cluett-Peabody, American Cyanamid, Monsanto, Stauffer Chemical, Union Carbide, St Regis Paper, Lily-Tulip Cups, Gibson Greeting Cards.

Total US investment in Australia reached the $1 billion mark this year, and more than 1,000 American firms are associated with Australian companies.

Industries specifically covered in the study include wool tops, wool, cotton, man-made fiber yarns; alkalis, chemical fertilizers, petroleum refining; pulp, paper and paperboard. In each category, charts and statistical indices pinpoint industry characteristics including production markets, costs, materials, investment, overseas trade.

•

TERG-O-TOMETER—*United States Testing Co, Inc, 1415 Park Ave, Hoboken, NJ*—A laboratory-scaled multiple washing machine which simulates the action of the agitator-type home washer is described in this new bulletin. Standard apparatus for the American Home Laundry Manufacturers' Association and Federal Specifications, the Terg-O-Tometer is used to determine the detergent value of soap, synthetic detergents, and other washing compounds; the washability of fabrics; and the colorfastness of textile materials. The instrument is said to be applicable to experimental formulation or to finished products—as a research tool or as a practical quality-control device.

•

TEXTILE HANDBOOK—*$1.25 per copy; American Home Economics Association, 1600 Twentieth St, NW, Washington 9, DC*—This 108-page paperbound booklet, which was prepared by chairmen and members of AHEA's textile and clothing section, covers textiles from fiber through finished fabric, including the newer man-made fibers and the newer finishes used on fibers. It is written for consumers and for home economists who work with consumers as teachers or Extension Service workers, in adult education programs, in business, and in the mass media. It includes the following chapters: "Textile Fibers", "Fiber Identification", "Chemical and Physical Properties of Fibers", "Yarns", "Fabric Construction", "Finishes", "Dyes and Dyeing", "Fabric Design", "Fabric Definitions", "Maintenance of Fabrics", "Textile Labeling", "Textile Legislation and Trade Practice Rules", and "Textile Standards".

•

THE MINIPAD LINE OF LABORATORY PADDERS—*Birch Bros, Inc, 32 Kent St, Somerville 43, Mass*—Four-page illustrated brochure covers the Minipad line of two- and three-roll laboratory padders.

•

TUBULAR GAGE GLASS ASSEMBLIES—*Jerguson Gage and Valve Co, 80 Adams St, Burlington, Mass*—Illustrated Data Unit #399 gives complete instructions for installation, operation and maintenance of Jerguson Tubular Gage Glass Assemblies.

•

TWO-ROLL "QUICK CHANGE" LABORATORY CALENDER—*Birch Bros Inc, 32 Kent St, Somerville 43, Mass*—Circular BB969 illustrates and describes this addition to the Minicalender series. Standard features and optional equipment are listed.

•

UNION CARBIDE SILICONES—*Silicones Division, Union Carbide Corp, 270 Park Ave, New York 17, New York*—This booklet, illustrated with photographs, charts and graphs, describes these man-made chemicals, lists their uses in consumer and industrial products, and suggests a number of new applications for them. To be especially noted by the reader is the series of charts covering the properties and features of Union Carbide silicone fluids, resins, water repellants, antifoams and emulsions, and their adaptability for use by the chemical, textile and other industries.

Abstracts

(*continued from page 61*)

Disperse dyes are printed on types 62 and 64 Dacron in approximately the same manner as types 54 and 56.

Several carriers are discussed. The choice of carrier will depend on the method of steaming or heat-treatment used.

•

The Effect of Silicone Softeners on Resin-treated Cottons

Simpson, B G, *Textile Trends* 3, #8, 75-81, Nov, 1960

Among the many advances in textile-chemical technology in recent years, the successful application of resins to cotton is certainly one of the foremost. The finishing industry is by now quite familiar with the various thermosetting resins and their effects on cotton.

Besides the advantages of resin applications, however, there are a few disadvantages. These are primarily due to a loss in extensibility of the fiber on being cross-linked by the resin. This results in reduced physical strength and at times in a poor hand. Finishers have attempted to overcome these deficiencies by what is now common practice: the addition of a softener.

The most commonly used softeners are those based on long-chain fatty compounds, such as sulfated tallow or oils. As these softeners are not fixed to the fiber, they are removed during drycleaning or laundering of the fabric.

Silicones are a comparatively recent step in the evolution of softeners, and have many desirable characteristics. The silicone fluids used in water-repellent emulsions are blends of dimethyl- and methylhydrogen-polysiloxane. Each of these fluids fulfills a particular function in the softener structure. The dimethylpolysiloxane is generally credited with the lubricating characteristics by virtue of its many organic groups, while the methylhydrogenpolysiloxane contributes durability.

When the emulsion is applied to a fabric, it results in a tough, transparent, hydrophobic, pliable film surrounding each individual fiber. This silicone "skin" is insoluble in water and the common drycleaning solvents; therefore the silicones should be more durable than the organic-type softeners.

The author describes tests made on a mercerized cotton fabric with three typical resin combinations, all based on dimethyl ethylene urea, and applied with several different softeners, including one cationic, one anionic, and one nonionic. Various nonionic silicone emulsions were also used as softeners. The fabric was padded, dried at 160°F and cured at 300°F for seven minutes. A number of physical tests were made, both on the unlaundered fabric and after one, three and five launderings.

It was found that the silicone-softened fabrics were

(*concluded on page 85*)

QUALITY DYEING MACHINES FOR QUALITY DYEING

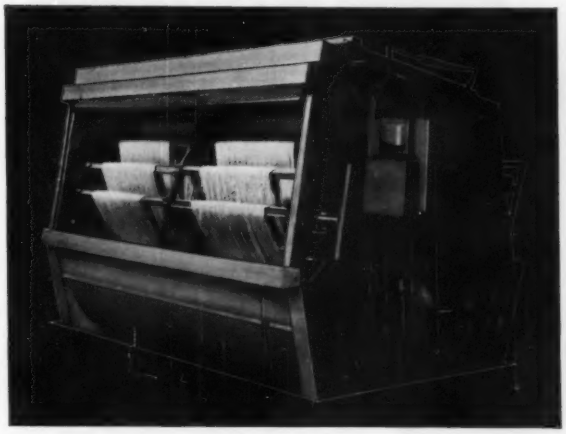
KWG REEL TYPE SKEIN DYEING MACHINE

- **All stainless steel, non-hoist built to capacities 100 to 1000 lb.**
- **Hoist type to capacities of 75 to 600 lb.**
- **For all types of yarns and narrow fabrics.**

Paddle Wheel machines in sizes from 2 to 850 lb.

Skein dyeing machines for zipper tape and narrow fabrics in capacities from 100 to 500 lb.

KWG DUO-FLO Suspended Skein-Type dyeing machines for high bulk orlon, other man made and natural yarns.



Come to see us at Booth 947, at the KNITTING ARTS EXHIBITION

Klauder Weldon Giles **MACHINE COMPANY** *Adams Avenue and Leiper Street, Philadelphia 24, Pa.*

FIRST
from BALTIMORE

The First Commercial ELECTRIC CARLINE in the UNITED STATES was operated between BALTIMORE and HAMPDEN in 1885.

AND ALSO FROM BALTIMORE...

YOUR FIRST CHOICE IN BLACKS

- DIRECT
- ACID
- DEVELOPED
- ACETATE
- FORMALDEHYDE
- LOGWOOD

THE HOUSE OF BLACKS

Consult your local dyestuff distributors for information and samples. Shipments can be made from our Baltimore factory.

Courtesy – The Baltimore News-Post

YOUNG ANILINE WORKS, INC.

OFFICE AND FACTORY: 2701-2755 BOSTON STREET • BALTIMORE 24, MARYLAND

AQUAZINE* 100

Aquazine 100 is a complete new and different approach to the problem of softening textile products. It is a substantive lubricant having high spreading and penetrating power as well as excellent dye leveling properties. Extremely low particle size insures excellent dispersability and leveling. Aquazine 100 can be applied by padding or by exhaustion from a long bath. Fabrics are softer without loss of tensile strength, colors are more intense, and hand, drape and tear resistance are materially improved.

. . . THE FIRST TRULY EFFECTIVE SOFTENER for use in Napping Knitting Wash and Wear

Aquazine 100 is a good all-purpose softener for cotton, wool, synthetics and blends. Because of its controlled exhaustion it is particularly applicable to package machines—penetrating evenly throughout and assuring uniform knittability. Cotton goods retain whiteness over prolonged periods and have good flex-abrasion, crease resistance, and hand. Blankets are softer. On corduroys, Aquazine 100 greatly improves hand and pile.

For softer, brighter fabrics with added sales-appeal, use Aquazine 100. Write for full information and samples.

*Trade Name, Manufactured by Moretex under basic patents under license from W. R. Grace Co.

MORETEX *Chemical Products,* INC.

314 W. Henry St., Spartanburg, S.C.

Established 1908 Manufacturing Chemists

FOR

"SCOUR POWER"

that gets ALL the dirt from

NYLON · DACRON®

and other fabrics

REXOSOLVE

100% active solvent scour – tried and proven in use by many of the nation's leading finishers, who depend on it to get oil and grease soils and dirtiest knots out of Nylon, Dacron and other fabrics.

and REXOPON

Highly efficient detergent in paste form. For Nylon, Dacron and other fabrics. Brightens color and minimizes crocking when used as a soaping-off product for vats and napthols. Is also a highly effective general scouring agent.

NON-SLIP AND WEIGHTER

COMPATABLE WITH WATER REPELLENTS • DYE FIXING AGENTS • RESINS

REXOBOND 46

SEND FOR FREE DATA SHEET

EMKAY MANUFACTURES:

• Emkabase • Emkacide • Emkafol • Emkagen • Emkalane • Emkalite • Emkalon • Emkalube • Emkanet • Emkanol • Emkapel • Emkapene • Emkaperm • Emkapon • Emkasize • Empkasol • Emkatard • Emkatex • Emkatol M • Emkaterge • Emkawate • Rexobase • Rexobond • Rexoclean • Rexodull • Rexofos • Rexogel • Rexogum • Rexole • Rexolene • Rexoloid • Rexolube • Rexopene • Rexopon • Rexoscour • Rexosolve • Rexoslip • Rexowax • Rexowet.

WRITE FOR DETAILS

MANUFACTURING CHEMISTS EMKAY CHEMICAL COMPANY EMKA PRODUCTS-REXO

319-325 Second St., Elizabeth, N. J.

Canadian Selling Agent:
THOMAS ROSTRON & COMPANY
4577 Melrose Avenue Montreal, Quebec, Canada

Abstracts

(concluded from page 82)

generally superior to the organic softeners in tear-strength values, slightly inferior in tensile strength and flex-abrasion values, and definitely superior in wrinkle-recovery values.

When a silicone-curing catalyst was added to the resin-curing catalyst, superior durability was obtained.

Further, the silicone softener was found to be superior to the organic softeners as a sewing lubricant.

The silicone softeners have found many other uses; eg, as napping softeners; for use on naphthol-dyed cottons; and as a pretreatment prior to schreinering or embossing.

•

Optical Brighteners in Textile Finishing

Geigy, W, *Ciba Rev* #140, 18-22, Oct, 1960

Optical brighteners have the following properties in common: practically no color, affinity for fibers, and a reddish-blue to greenish-blue fluorescence on the fiber.

The same brighteners, when applied to various types of fibers, may show widely different kinds of whitening effect or degree of fastness.

When used on poorly bleached fibers (eg, cream or beige hues), the fluorescence may in certain cases have a reddish discoloration, and in extreme cases the brightened fabric may appear to be more strongly colored than the untreated goods. Similar changes in shade are seen when brightening pastel shades.

In both dyeing and optical brightening processes, similar methods are used. The following methods of application to the various fibers have become standard practice.

Cotton and other vegetable fibers. In the exhaustion method, the goods are treated with the brightener for 15-30 minutes at room temperature. An addition of Glauber's salt is an advantage. The uptake of optical brighteners is variously affected by temperature; some give better results at 50°C. No rinsing is necessary.

The brightener may also be applied by padding in a cold bath and drying immediately. A higher temperature is used when combining the brightener with finishing agents.

Wool. Most brighteners which normally require an acid bath to go on to the fiber exhaust on to wool from weakly alkaline baths also, if reducing agents are present. The temperature of application is usually 75°C or below. The lightfastness is improved at the higher temperatures.

Polyamide fibers. Anionic products usually give best results in an acid medium at 50°C or above. Cationic products are applied from a neutral or weakly acid bath; strong acids have an adverse effect.

Polyester fibers. The brightener is applied with the assistance of a carrier at 50-75°C. Alternatively, the "pad-bake" method may be used, in which the fabric is padded with a suitable brightener and given a heat treatment at an elevated temperature.

Acrylic fibers. These are best treated in an acid bath. No suitable carriers have yet been found.

Cellulose acetate fibers. The brightener is applied in a neutral bath at 50-75°C for secondary acetate and close to the boil for triacetate fibers. A padding method may also be used, followed by a heat treatment.

Optical brighteners are often combined with either preparatory or finishing processes, as well as with dyes. In resin finishing, the brightener must be compatible with the resin and the catalyst used, and must be stable to heat.

Assuring maximum efficiency in dye-stripping operations PEREGAL® ST*

- inactivates stripped dye
- prevents redeposition on fiber

Peregal ST is a most effective aid in the removal of color—particularly vat, direct, or sulfur dyes from cellulosic fibers. In stripping operations, whether in long liquors, package machines, or on jigs, once the cellulose-dyestuff bond between fiber and dye is broken, the dislodged dye is preferentially bound to Peregal ST and redeposition is prevented.

This sequestering activity is of particular value in stripping rag stock where a wide variety of dyestuffs and variable stripping responses are encountered. Peregal ST is also an excellent aid in lightening shades of direct-dyed material.

***A side note to dyers and finishers with brightener-resin-catalyst problems: Peregal ST added to the resin bath (in range 0.15–0.30%, based on weight of total finish bath) slows down the exhaust rate and considerably reduces any tendency to "tail off" during extended padding operations.**

For further information, price schedules, and samples, write to:

From Research to Reality

gdc gaf GENERAL DYESTUFF COMPANY
A DIVISION OF
GENERAL ANILINE & FILM CORPORATION
435 HUDSON STREET • NEW YORK 14, NEW YORK

BARISOL BRM

SUPER BRM and SUPER BRM 200. These superior phosphated surfactants are giving unique results in the preparation, dyeing and bleaching of more than one billion yards of textiles yearly. dexter chemical corporation

Textile Chemical Division, New York 59 Boston ■ Charlotte ■ Atlanta ■ Greensboro ■ Buenos aires

D-27

CLASSIFIED ADVERTISEMENTS

Advertisements in this section are restricted to HELP WANTED — POSITION WANTED — EQUIPMENT wanted or for sale. Rates, effective February 1, 1951; One-time, $14.00 per column inch; 13 or more times, $12.00 per column inch: Position Wanted, $4.00 per column inch. Figure 38 average words per column inch. Publisher reserves the right to reject or discontinue any classified advertisement. Replies should be addressed: Box Number ..... c/o American Dyestuff Reporter, 44 East 23rd Street, New York 10, N. Y.

• SERVICES •

ABSTRACTING SERVICES—Abstracting and digesting of foreign patents and periodicals. Literature review and special reports in dyestuff and cellulose chemistry. PAUL WENGRAF, 88-36 ELMHURST AVENUE ELMHURST 73, NEW YORK

• CAPITAL AVAILABLE •

CAPITAL AVAILABLE: Young, single textile chemist desires to invest in an existing textile chemical compounding, screen printing, or finishing concern. M. S. degree and eight years experience. Write Box No. 148

• OPPORTUNITIES AVAILABLE •

WANTED: TEXTILE CHEMISTS by large New England circular knit plant for laboratory and production departments. Please send complete resumes. Write Box No. 126

WANTED: TEXTILE CHEMIST AND DYER—Degree in organic chemistry or dyeing—with some experience in package and skein dyeing of nylon and Dacron. Must be aggressive and willing to accept responsibility. Position now in laboratory, leading to full control of dyehouse as head dyer. New England. Salary open—Please send complete resume. Write Box No. 127

WANTED: CHEMIST—with several years of practical experience in the application and evaluation of textile specialties, detergents, softeners, resins and other finishes for laboratory and customer service work. Excellent opportunity in Southern branch laboratoty of large wellknown organization. Send complete resume, salary requirements. Write Box No. 138

CAREER OPPORTUNITY—for recent textile school or textile chemistry graduate age 21-24. The man we are looking for should have a friendly, outgoing personality and be interested in the idea of a sales career—even though he may not be heading in that direction now. Thorough training program, good salary and benefits, excellent growth possibilities—New York area. Replies held in strictest confidence. Our employees know of this advertisement. Write Box No. 141

WANTED: CHIEF CHEMIST AND RESEARCH DIRECTOR with thorough knowledge of textile specialty chemicals. Excellent opportunity with young progressing company in metropolitan area. Replies held in strictest confidence. Write Box No. 144

TIRED OF THE BIG CITY? AAA-1 client company in Wisconsin's Fox River Valley area has research and development openings for Textile Technologists with organic chemistry backgrounds, physical or organic chemists and chemical engineers—all at B. S. or M. S. level. Excellent opportunity in an expanding organization for professional growth and personal achievement. Write stating age, education, experience and salary requirements to: HARRIS RESEARCH LABORATORIES, INC., 6220 Kansas Avenue N.E., Washington 11, D.C. Replies held in strict confidence.

OPPORTUNITIES at FMC's Newly Enlarged Chemical Research and Development Center, Princeton, New Jersey in TEXTILES APPLICATIONS RESEARCH. Chemists with 1 to 6 years experience in the textile or textile chemicals industry to work on applications and technical service problems involving a wide variety of chemicals. These responsible positions in our Inorganic Research and Development Department offer excellent opportunities for growth. Arrange for an interview by submitting a resume, including salary requirements to: Mr. W. J. Paquette, FOOD MACHINERY & CHEMICAL CORP., P. O. Box #8, Princeton, N. J.

• OPPORTUNITIES AVAILABLE •

WANTED: PIECE DYER ON WOMEN'S WEAR FABRICS. Person must have full knowledge of handling fabrics thru Wet End of Preparation and Supervise Laboratory in establishing his own Formulations. Plant is located in Rhode Island. This is daytime employment and excellent company benefits. Write Box No. 149

WANTED: FINAL EXAMINER ON WOMEN'S WEAR FABRICS. Person must be highly qualified to handle the Dry Finishing Operation—This person must be highly qualified. Thorough knowledge of passing final judgment on goods shipped to cutting houses is a requisite. Plant is located in Rhode Island. This is daytime employment and excellent company benefits. Write Box No. 150

• PERSONNEL AVAILABLE •

POSITION WANTED: TEXTILE TECHNICIAN OR PLANT SUPERINTENDENT. Experienced in all phases dyeing, finishing and printing on cotton and synthetics. Currently employed in technical sales but desire change where knowledge and experience can be more profitably employed. Write Box No. 136

POSITION WANTED: TEXTILE CHEMIST OF COLORIST. B. S. Textile chemistry and dyeing—36 years of age, single. 10 years experience dyeing and printing (roller and screen). Desire position as textile chemist or colorist. Excllent references. Write Box No. 142

POSITION WANTED: Man fully experienced in the production dyeing of wool, cashmere and fur blend sweaters. Fully capable of setting up laboratory for formulation and color matching to tie in with production. Write Box No. 145

POSITION WANTED: SALES—graduate textile engineer, age 33, with plant supervisory experience in dyeing and finishing plus engineering sales of dyeing and finishing machinery, desires sales engineering responsibility. Write Box No. 146

POSITION WANTED: BOSS DYER OR PLANT MANAGER. 30 years of practical experience of all types in piece goods. Specialty—vat, naphthol and sulfur dyeing. Will take position anywhere in U.S.A. Write Box No. 147

FOR BEST RESULTS . . .

TRY A REPORTER CLASSIFIED

DURAFLUFF

will give your fabric:

- Soft, silky hand.
- Good drape.
- 50-75% more abrasion resistance.
- Increased tear strength.
- Improved sewability.

Write now for Bulletin M-101 and samples.

MANUFACTURERS CHEMICAL COMPANY, INC.

1450 Ferry Ave., Camden 4, N.J. • WOodlawn 6-5200

Hosiery finishes • Latex compounds • Softeners • Water repellents and other textile chemicals

SAVE!

Get Longer Service with

"Metalsmiths" Stainless Steel and Monel Utensils

METALSMITHS utensils are built to the exacting needs of corrosion-resistant service in the textile industries. Efficiently designed—made of correct metal analysis and weight—fabricated by latest techniques—backed by over 30 years' specialization in corrosion-resistant equipment.

Prompt Shipment — Anywhere

WRITE FOR LATEST CATALOG — PRICE LIST

METALSMITHS

562 White St., Orange, N. J.

Specialists in Corrosion-Resisting Equipment

BURKART-SCHIER CHEMICAL CO.
CHATTANOOGA, TENNESSEE
MANUFACTURING CHEMISTS FOR THE TEXTILE INDUSTRY

ADR ADVERTISING INDEX

Allied Chemical Corp.
National Aniline Division
Nitrogen Division
Solvay Process Division
Althouse Chemical Company 59
American Cyanamid Co. Fourth Cover
American Dyestuff Reporter 89
American Dyewood Co., Inc. 81
Ansbacher-Siegle Coporation
Antara Chemicals Div., General Aniline & Film Corp.
Apex Chemical Co., Inc. 11
Archer-Daniels-Midland Company 5
Arkansas Company, Inc. 15
Arnold, Hoffman & Co., Inc. 26
Atlantic Refining Co., The
Atlas Electric Devices Co. 12

Baker Chemical Co., J. T.
Becco Chemical Division
Food Machinery & Chemical Corp. 23
Berkshire Color and Chemical Co. 22
Birch Brothers, Inc.
Burkart-Schier Chemical Co. 88
Butterworth & Sons Co., H. W.

Calgon Company 10
Campbell & Company, Inc., John 71
Carbic-Hoechst Corp. 36, 37
Chemical Products Corp. 63
Chlor-Alkali Division
Food Machinery and Chemical Corporation
Ciba Company, Inc. Front Cover
Columbia Southern Chemicals (refer to Pittsburgh Plate Glass Co., Chemical Div.) 38
Crescent Chemical Company, Inc.

De Paul Chemical Co. 77
Dexter Chemical Corp. 73, 86
Dow Corning Corp. 77
Du Pont de Nemours & Co., Inc., E. I.

Eastern Color & Chemical Co.
Eastman Chemical Products, Inc. 8
Emery Industries, Inc.
Emkay Chemical Co. 84

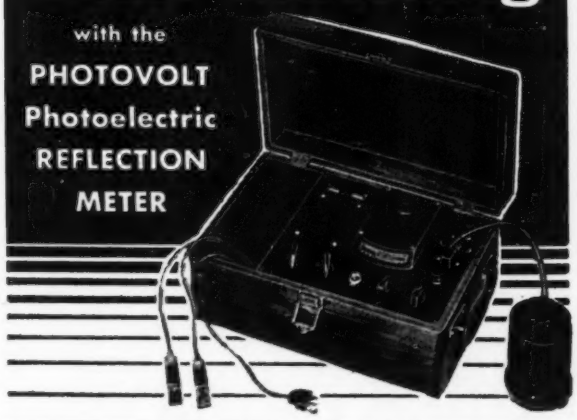
Fablok Mills, Inc. 79
Fancourt Co., W. F. Third Cover
Farbwerke Hoechst, A. G. 36, 37
Feeley Co., E. J. 60
Food Machinery & Chemical Corp.
Becco Chemical Division 23
Chlor-Alkali Division
Foxboro Co., The 14

Gaston County Dyeing Machine Co. 64
Geigy Dyestuffs
Division of Geigy Chemical Corporation 6
General Aniline & Film Corp. 19, 85
General Dyestuff Company 19, 85
Goodyear Chemical Division
Goodrich Chemical Company, B. F.
Gross & Company, A.

Hagan Chemicals & Controls, Inc. 10
Hampshire Chemical Corporation
Harchem Division, Wallace & Tiernan, Inc.
Harshaw Chemical Co., The 21
Hart Products Corporation, The
Hercules Powder Company
Heyden Newport Chemical Corporation
Hilton-Davis Chemical Co., Division 13
Hoechst Chemical Corp. 36, 37

Color Matching

with the
PHOTOVOLT
Photoelectric
REFLECTION
METER



A truly practical precision instrument for color matching and for specifying color by tristimulus values, also for fading and detergency tests . . . for production control and laboratory work.

Portable, sturdy, simple to operate

Also: Colorimeters, Fluorescence Meters, pH Meters

Write for Bulletin No. 605 to:

PHOTOVOLT CORP.
1115 BROADWAY NEW YORK 10, N. Y.

AMERICAN DYESTUFF REPORTER

BINDER

—to hold all 26 issues of the Dyestuff Reporter as they come out in 1961. Get one for 1960 copies as well.

—Sturdy, hard-cover, locking metal blades. Keeps copies safe, clean, neat and handy. Name is gold-stamped on front and spine.

ONLY *$4.50* EACH

Send check with order to:

AMERICAN DYESTUFF REPORTER

44 East 23rd Street
New York 10, NY

NOW! GET THE FINEST BOTTOM EVER FOR DYEING AND BLEACHING!

ZYROL®

...a sensational NEW detergent developed by Procter & Gamble

Zyrol solves your fabric preparation problems... gives you the dependable results you want. It's because Zyrol offers an amazing combination of properties never before available in a single product . . .

- Fast alkali rinsibility
- Strong suspending power
- Low foaming
- Excellent compatibility
- Lubrication properties of soap
- Very high activity

Economical, too! Zyrol is a highly concentrated product . . . a little does much!

Contact your local Procter & Gamble Representative or MAIL COUPON FOR INFORMATION

Procter & Gamble, Textile Finishes Section
P. O. Box 599, Cincinnati 1, Ohio

Please send full details of ZYROL

NAME_____

FIRM_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

Reduce Chrome Wool Dyeing Time 50%!

You Get . . .
★ 3 Cycles per kettle instead of just 2
★ Softer Stock
★ Finer Spinning
★ Less Card Waste
★ Dyes at 185°F
★ A deep, rich Chrome Black
ORCO

NEROSOL BLACK RF

PATENTS PENDING

Here's the best black for dyeing greasy or oily wool, such as bleached cashmere, mohair, caracul and other coarse types of wool. Nerosol Black RF has *exceptional solubility*. Stock is dyed evenly, with full penetration. Shade is developed before stock has packed hard in dyeing machine. And you dye in 1½ hours instead of 3½ per cycle!

Write for Catalog Sheet and Samples

ORGANIC ORCO CHEMICAL CORPORATION

Main Office and Plant
84 Valley St., East Providence, R. I. GEneva 4-3300

Southern Branch
433 Highway 29, Concord, N. C. STate 2-6262

ORGANIC

ADR ADVERTISING INDEX

Interchemical Corp., Color & Chemicals Division
International Salt Co. 25

Klauder Weldon Giles Machine Co. 83
Kolker Chemical Corp.
Koppers Company, Inc. 3

Laurel Soap Manufacturing Co., Inc. 74
Leatex Chemical Company 79, 81
Lestoil Products, Inc. 20

Manufacturers Chemical Company, Inc. 87
Marbon Chemical Div. of Borg-Warner Corp.
McCarty Aniline & Extract Co.
Metalsmiths Div., Orange Roller Bearing Co., Inc. 87
Moretex Chemical Products Inc. 84
Morton Salt Co.

National Aniline Division
Allied Chemical Corp.
National Starch and Chemical Corporation
Nitrogen Division, Allied Chemical Corp.
Nopco Chemical Company
Nyanza Color and Chemical Co.

Olin Mathieson 18
Onyx Chemical Company
OPW-Jordan
Organic Chemical Corporation 90

Philadelphia Quartz Co.
Photovolt Corp. 89
Pittsburgh Plate Glass Co., Chemical Div. 38
Procter & Gamble 89
Putnam Chemical Corp.

Reading Scientific Company 79
Refined Products Company
Rohm & Haas Co. 67
Rona Pearl Corporation
Royce Chemical Company
Rudnick, Representatives, Edward S.
Rumford Chemical Works

Sandoz, Inc.
Scholler Bros., Inc. 17
Seydel-Woolley & Co. 16
Shell Chemical Company
Solvay Process Division, Allied Chemical Corp.
Sou-Tex Chemical Company, Inc. 35
Standard Chemical Products, Inc
Sun Chemical Company

Tanatex Chemical Corp. Second Cover
Taylor Instrument Companies
Tennessee Corporation 74
Tex-Chem Co.
Texize Chemicals, Inc.
Toshin Kogyo Co., Ltd.
Turbo Machine Company

Union Carbide Corp.

Verona Dyestuffs 69
Virginia Chemicals 24

Wallace & Tiernan, Inc., Harchem Division
Wallerstein Company
Watkins Salt Co.
West Indies Chemical Works, Ltd., The 81
Wica Chemicals, Inc. 4
Wolf & Co., Jacques

Young Aniline Works, Inc. 83

Zinsser Division
Harshaw Chemical Co. 21

We're spreading our wings in '61...

OPENING A BIG, NEW FANCOURT PLANT AT GREENSBORO NORTH CAROLINA

WATCH FOR THE OPENING DATE...
THE OPENING OF THE FINEST FACILITIES AND SPEEDIEST SERVICE IN THE TEXTILE CHEMICAL INDUSTRY

Yes, we're moving ahead in '61, expanding our operation to provide our customers with the newest, most modern advancements in the field . . . advancements in every department: research, laboratory, production and service. Our progress means our customers' progress!

NEW MODERN RESEARCH AND DEVELOPMENT LABORATORY
equipped with latest instruments for developing, testing new products . . solving customer problems.

DOUBLE PRODUCTION
expanded manufacturing department with newest equipment to maximize production.

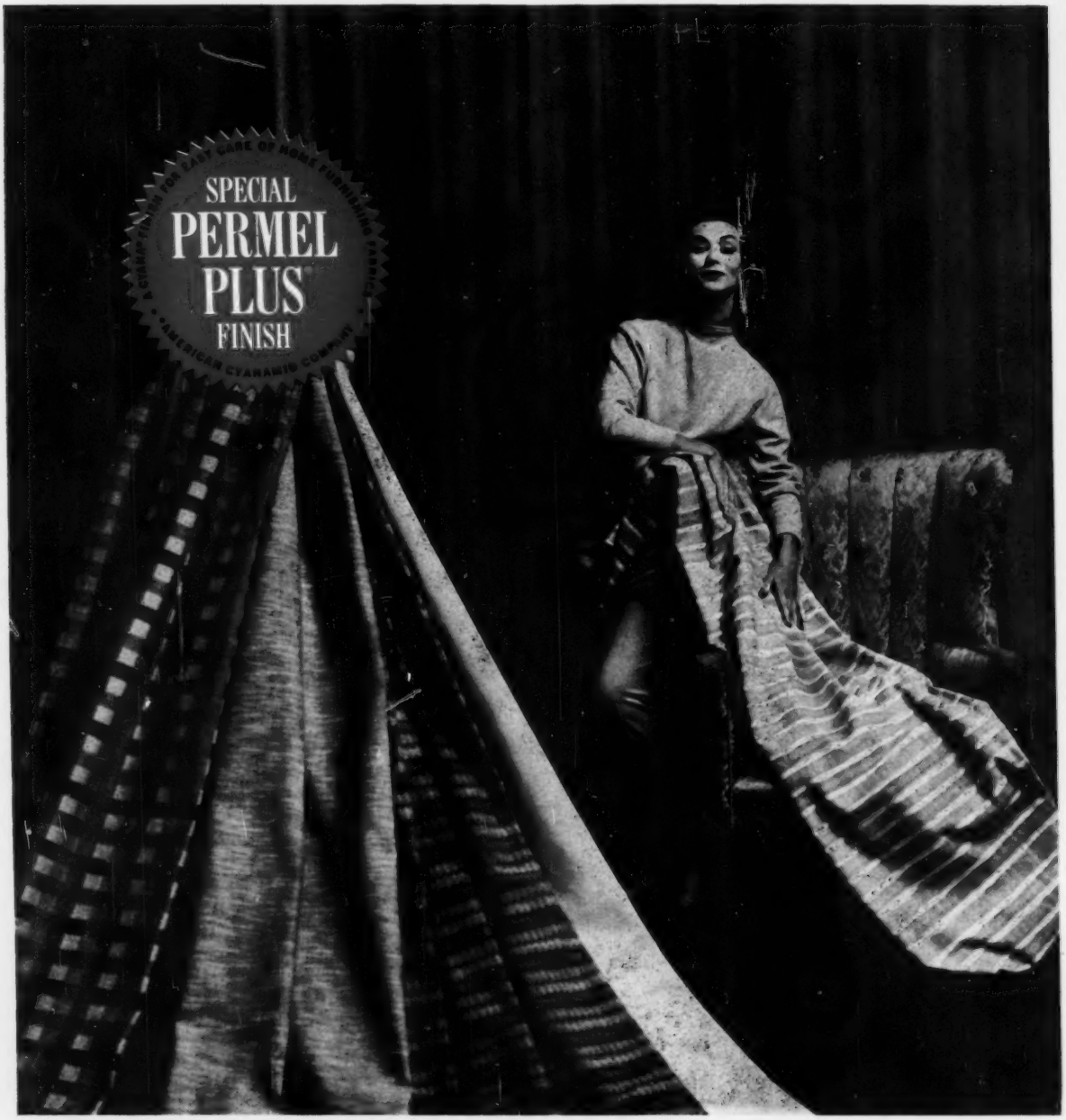
SPEEDIER SERVICE
improved new shipping facilities . . accelerated service to customers.

BIG, VOLUME-PRODUCING PLANT
ultra-modern, three-story building on ten-acre tract . . 25,300 sq. ft. operating space.

MOVE AHEAD WITH FANCOURT IN '61 . . . WATCH FOR OPENING DATE!

W. F. FANCOURT CO.
518 SOUTH DELAWARE AVE., PHILADELPHIA 47, PA.
SOLVING FINISHING PROBLEMS SINCE 1904

516 South Delaware Ave., Philadelphia 47, Pa.
Midwest Representative—Prospect Chemical Company, P.O. Box 126 Mt. Prospect, Ill.
Southern Offices—309 E. Davis St., Burlington, N. C. 1412 August Drive, Hixson, Tenn.
Canadian Office—Chemtex Products, Ltd. 49 Densley Ave., Toronto 15, Ontario
Caribbean, Central and South America A. M. Romero Corp., Empire State Bldg., New York 1, N. Y.
Australia—Paykel Bros., Ltd., 167 Missenden Rd., Newtown, Sydney
New Zealand—Paykel Bros., Ltd., P.O. Box 5046, Auckland, C. 1.



HOME FURNISHINGS FABRICS NEED SPECIAL PERMEL PLUS® FINISHES FOR FASTEST SALES!

Genuine easy care...everyone wants it. *You* can provide it *best* with Special Permel Plus Finish! • You can "tailor-make" it to the particular fiber content and fabric construction required..."engineer" it to meet the *differing needs* of curtain, drapery, slipcover and upholstery fabrics. Among the benefits imparted...depending on the fabric and end-use requirements...are: • complete home washability • fast drying with minimum wrinkling • wrinkle resistance • shrinkage control • spot and stain resistance • Like all *quality-controlled* Cyana® Finishes, Special Permel Plus Finish gives *long-lasting protection.* In addition, Cyanamid's impressive tailored promotional programs and mass advertising schedule helps move merchandise faster. Helps *you* to sell *more:* Write, wire or phone us today for full facts. No obligation, of course. • American Cyanamid Company/Textile Chemicals Department/111 West 40th Street/New York 18, New York/Producers of the World's Finest Textile Chemicals

CYANAMID